D.2 Pipeline Safety and Risk of Accidents

Page D.2-1, first paragraph —

In this section, the risks to public safety ~~and the environment~~ that could result from the construction activities, pipeline operation (unintentional releases) and project abandonment are presented. The impacts of accidents on the environment are discussed elsewhere throughout this document (e.g., Section D.4, Biological Resources). It should be noted that the text of this section was based on only conceptual engineering drawings and other data; detailed engineering drawings, calculations, specifications and other supporting data will not be available for review until after the Final Environmental Impact Report has been prepared.

Page D.2-14, under D.2.1.6 Environmental Setting: Proposed Project —

This section describes the engineering features of each of the seven segments of the Proposed Project. Detailed analytical assessment of the fault crossings and ground settlement (per "Guidelines for the Design of Buried Steel Pipe" by American Lifeline Alliance, July 2001, and "Guidelines for the Seismic Design of Oil and Gas Pipeline Systems" by American Society of Civil Engineers, 1984) and detailed engineering design of the pipeline and its appurtenances including valves, pig launchers, and receivers, etc. (per 49 CFR 195 and current industry standards) are currently underway. Results of these analyses and engineering design requirements may warrant additional valves along the pipeline Segments 1 through 6.

Page D.2-15, under D.2.1.6 Environmental Setting: Proposed Project, Segment 1, Phase 1 —

To accommodate the use of the existing pipeline, ~~at~~ near the northwest limit of the Rhodia facility, a permanent above-ground pig launcher/receiver station is proposed. This facility would be constructed to enable pigs to be received from the upstream 20-inch pipe. The facility would also be used to launch pigs into the downstream 14-inch pipe segment. The pig launcher/receiver station would be contained within an approximately 40-foot by 75-foot fenced area and would include necessary above-ground piping and valving to allow passage of normal maintenance pigs and internal inspection tools (aka "smart pigs"). The entire area would be curbed for containment.

Page D.2-21, under D.2.2.1 Federal —

Interstate and intrastate hazardous liquid transportation by pipeline and rail fall under the jurisdiction of the U.S. Department of Transportation, Research and Special Programs Administration, Office of Pipeline Safety (DOT). Hazardous liquid pipelines must conform with the design, construction, testing, operation and maintenance regulations contained in Title 49 Code of Federal Regulations (CFR) Part 195, "Transportation of Hazardous Liquids by Pipeline," as authorized by the Hazardous Liquid Pipeline Safety Act of 1979 (49 U.S.C. 2004). However, the DOT does not issue a construction permit or conduct a plan check for all pipeline projects. The California State Fire Marshal, acting as agent for the DOT, reviews the design and construction of major pipeline projects.

Page D.2-22, under D.2.2.1 Federal —

Part 195.260. Valves: Location. A valve must be installed at each of the following locations:

(a) On the suction end and the discharge end of a pump station in a manner that permits isolation of the pump station.

(b) On each line entering or leaving a breakout storage tank area in a manner that permits isolation of the tank area from other facilities.

(c) On each mainline at locations along the pipeline system that will minimize damage or pollution from accidental hazardous liquid discharge, as appropriate for the terrain in open country, for offshore areas, or for populated areas.

(d) On each side of a water crossing that is more than 100 feet (30 meters) wide from high-water mark to high-water mark unless the Administrator finds in a particular case that valves are not justified.

(e) On each side of a reservoir holding water for human consumption.

Page D.2-23, under D.2.2.2 State —

The Pipeline Safety Division of the Office of the State Fire Marshal acts as the agent for the DOT and exercises exclusive regulatory and enforcement authority over interstate~~intrastate~~ pipelines within California. The Pipeline Safety Division also acts as the agent for the DOT in implementing the federal regulations.~~, as those regulations apply to interstate pipeline located within the State. The Division also enforces California State regulations, which impose additional requirements on the State's intrastate pipeline operators — beyond the federal requirements.~~

~~The California State regulations are includes in the California Government Code, Sections 51010-51019.2. Some of the requirements that exceed federal regulations include the following:~~

- ~~Every pipeline over 10 years of age and not provided with effective cathodic protection must be hydrostatically tested every three years, except for those lines on the list of higher risk lies, which must be hydrostatically tested annually.~~
- ~~Every pipeline over 10 years of age and provided with effective cathodic protection must be hydrostatically tested every five years, except for those lines on the list of higher risk lies, which must be hydrostatically tested every two years.~~
- ~~Piping within a refined products bulk loading facility served by pipeline must be pressure tested every five years if cathodically protected, or every three years if not effectively cathodically protected.~~
- ~~Hydrostatic tests conducted in compliance with the State regulations must be certified by an independent testing firm, approved by the Pipeline Safety Division.~~

After the Exxon Valdez ran aground in Alaska in March 1989, the U.S. Congress responded by passing the Oil Pollution Act of 1990. The State of California enacted its own comprehensive oil spill program, the Lempert-Keene-Seastrand Oil Spill Prevention and Response Act of September 1990. The California Act paralleled the federal law in some respects, but added additional emphasis on oil spill prevention. The Act created Harbor Safety Committees, expanded requirements for contingency plans for vessels and marine facilities, created inspection and monitoring programs, required studies of pilotage and tug escorts, called for educational programs, created a petroleum chemistry laboratory, trained oil spill response teams, and provided for the rehabilitation of oiled wildlife.

Page D.2-24, under D.2.3.1 Introduction —

Evaluating the significance of impacts of a proposed project is a subjective process. It depends on the determination of an acceptable level of risk to the environment and an acceptable level of risk to humans. The potential impacts and probability of occurrence of incidents associated with the proposed

pipeline are presented in Sections D.2.3.3 through D.2.3.~~10~~11. Accident statistics for each pipeline segment are presented in Appendix 2. The impacts associated with alternatives are discussed in Sections D.2.4 and D.2.5.

Page D.2-24, under D.2.3.2 Definition and Use of Significance Criteria —

- The design of the pipeline and related facilities is shown to be expected to result in a rupture or failure that would cause exposure hazards to the public from fire, explosion, or release of chemical or product materials, as supported by historical performance of similarly designed pipelines, or could cause significant impacts to other facilities critical to public health and safety.~~.~~

Page D.2-26, under Impact S-1.2: Severance of Third Party Substructures during Construction —

During excavation operations, there is a risk of personal injury or death (primarily construction worker), environmental contamination, and/or property damage which could be caused by the striking or severance of existing substructures (e.g., power cables, foreign pipelines). Some of these third party substructures are critical to local public safety.

The City of Benicia's existing 36-inch diameter water line is an example of a critical public utility that could be affected by the proposed products pipeline. The Applicant's proposed 20-inch diameter pipeline will parallel a portion of this water line. The 36-inch diameter water line is virtually the City's sole water source. Damage to this pipeline could result in local impacts in as few as 48 hours (e.g., interruption of water service, inadequate fire protection, refinery shut-down, etc.). The Applicant's proposed pipeline is generally placed in private easements or road rights-of-way, at least 30 feet away from the City's water line. However, the lines will cross at two locations; at these locations, Mitigation Measure S-1a requires that vertical separation shall be at least 24 inches.

Page D.2-27, under Mitigation Measure for Impact S-1.2: Severance of Third Party Substructures during Construction, Mitigation Measure S-1a —

> **Prior to digging over, or within three feet of a known substructure, the Applicant shall require the construction contractor(s) to probe the area to positively locate the facility and measure the depth of the substructure; the Applicant shall also require the use of hand digging (including the use of air tools and/or vacuum extraction) within two feet (horizontal and vertical) of any existing substructure and within five feet of any pedestal, closure, riser guard, pole, meter of other structure. When paralleling an existing underground facility (within 5 feet), the facility shall be exposed approximately every 50 feet (but at no greater than 100 foot intervals) to positively verify the location and depth of the line.**
>
> **When boring or directionally drilling, the boring equipment shall be placed such that it is boring away from the majority of other underground facilities. When such facilities must be crossed, they shall be exposed unless specific exemption is provided by the utility owner to verify their location and depth. If encroachment permits require exposure, then owner exemption is not applicable. The results may require that the bore route or depth be changed to avoid potential damage to the existing facility. If exemptions are received, SFPP shall maintain a list of those exemptions and provide it to the CSLC monitor.**
>
> **If during the course of the work, unmarked pipelines are encountered, the Applicant shall take appropriate measures to identify the owner of the facility. This shall include, but is not limited to the following substructure research: USA notification; research of City, County,**

and State records; and communication with other utility owners in the area. If the owner of the facility cannot be determined, the proposed pipeline shall be lowered to avoid any conflict. If it is impossible to avoid an existing substructure of unknown ownership or use, the pipe contents shall be positively identified before any cutting of the substructure is allowed; this shall be done by tapping or other means. The substructure may not be cut or removed until a safe procedure for doing so has been developed; this procedure will vary, depending on the pipe contents and site conditions. Once the facility has been removed, the remaining ends shall be capped using the same construction techniques as the substructure's original construction to prevent leakage should the substructure be pressured. Cathodic protection tests shall also be conducted. If the facility is cathodically protected, a bonding cable shall be installed to maintain the integrity of the facility's cathodic protection system.

To protect the City of Benicia's 36-inch diameter sole water supply pipeline which parallels the proposed route along Lopes Road, SFPP shall finalize an agreement that defines measures to insure that this facility is adequately protected during construction (e.g., lateral separation, vertical separation at crossings, blasting limitations, potholing plans, etc.), operation (e.g., unintentional releases, fires, explosions, etc.), maintenance (e.g., cathodic protection; see also Mitigation Measure S-2f), and emergency response. At least 30 days prior to beginning construction, the Applicant shall submit a report to the CSLC (and any other agency with permit jurisdiction) for review and approval the final agreement on protective design measures defined above.

Page D.2-28, under Mitigation Measure for Impact S-1.3: Injury, Death or Property Damage from Construction Fire, Mitigation Measure S-1b —

- **Maintain all areas within the 100-foot construction ROW clear of vegetation and other flammable materials for at least a 30-foot radius of any welding or grinding operations. In areas where ~~, or the use of~~ an open flame is used, ~~(~~dry vegetation shall be removed from at least a 50-foot radius~~. of any welding or grinding operations).~~ Clearing of vegetation shall not extend beyond the construction ROW. Hot work shall be conducted within the 100-foot construction ROW such that the stated clearances can be maintained without extending beyond the construction ROW limits.**

Page D.2-31, under D.2.3.5 Impacts of Unintentional Releases —

- **Pipeline Rupture (8,400 barrels per hour, BPH).** This hazard involves a severance of the pipeline that is large enough to allow the entire throughput (8,400 barrels per hour, BPH) to escape from the pipeline. Some of the most likely causes of a rupture would be complete pipe severance or very large hole caused by a large excavator hitting the pipeline, pipe severance caused by landslide, earthquake, or fault crossing, pipe severance caused by exposed pipe within stream channels, or pipe over pressure. For impact assessment purposes, it was assumed that the leak detection system would recognize this rupture in 1 minute; this is the fastest leak detection time provided by the Applicant, for leaks of approximately 11% of flow volume. It was also assumed that an additional five minutes would be required for the operator to analyze the data, initiate the response, stop the shipping pump, and close the MOVs. The time assumed to arrive at a manual block valve and close it and for the arrival of emergency response equipment depends on location, as described in Section D.2.3.7. Using a maximum 8,400 BPH release flow rate and a total 6 minute time period yields an 840 barrel continued pumping release volume component for these ruptures.

Page D.2-33, Table D.2-27:

Table D.2-27. Pipeline Operation Impacts

Cause of Impact	Impact	Applicant Design Measures
External Corrosion	Property or environmental damage, injury, or death resulting from external corrosion–caused pipeline releases.	The Applicant has proposed to install a high quality Pritec exterior coating. The Applicant also plans to conduct internal inspections (smart pigs) every five years. Compliance with 49 CFR 195~~-Subparts C, D, F, G, and J regulatory requirements~~. ~~(See Section C.2.2.1.)~~
Internal Corrosion	Property or environmental damage, injury, or death resulting from internal corrosion–caused pipeline releases.	The Applicant ~~also~~ plans to conduct internal inspections (smart pigs) every five years. Compliance with 49 CFR 195~~-Subparts C, D, F and G regulatory requirements~~. ~~(See Section C.2.2.1.)~~
Third Party Damage	Property or environmental damage, injury, or death resulting from third party damage–caused pipeline releases.	The Applicant has proposed heavier wall (0.500") pipe beneath major river crossings. Compliance with 49 CFR 195~~-Subparts C, D, F, and G regulatory requirements~~. ~~(See Section C.2.2.1.)~~
Seismic Hazards	Property or environmental damage, injury, or death resulting from seismic damage–caused pipeline releases	The Applicant has proposed a heavier wall pipe beneath major river crossings and across fault crossings. The pipeline design and operation will be based on American Lifeline Alliance and American Society of Civil Engineers guidelines for seismic design of oil and gas lines and buried pipes and compliance with 49 CFR 195.
Human Operating Error	Property or environmental damage, injury, or death resulting from human operating error–caused pipeline releases.	Compliance with 49 CFR 195~~-Subparts C, F, and G regulatory requirements~~. ~~(See Section C.2.2.1.)~~
Design Flaw	Property or environmental damage, injury, or death resulting from design flaw–caused pipeline releases.	Compliance with 49 CFR 195~~-Subparts C and E regulatory requirements. (See Section C.2.2.1.)~~
Equipment Malfunction	Property or environmental damage, injury, or death resulting from equipment malfunction–caused pipeline releases.	Emergency backup control center. Compliance with 49 CFR 195.
Fire	Property or environmental damage, injury, or death resulting from fire as a result of a pipeline releases.	Implementation of a leak detection system to identify ~~potential~~ unintentional releases.
Maintenance	Property or environmental damage, injury, or death resulting from maintenance–caused pipeline releases.	Compliance with 49 CFR 195~~-Subparts F and G regulatory requirements. (See Section C.2.2.1.)~~
Weld Failure	Property or environmental damage, injury, or death resulting from weld failure–caused pipeline releases.	Compliance with 49 CFR 195~~-Subpart D regulatory requirements. (See Section C.2.2.1.)~~

Page D.2-35, under Impact S-2: Operational Pipeline Accident Causing Injuries or Fatalities —

S-2a Supplemental Spill Response Plan. SFPP shall develop a Supplemental Spill Response Plan (SSRP). This document will be incorporated into appropriate sections of SFPP's Integrated Contingency Plan (ICP). ~~as a separate document to supplement its existing and approved Oil Spill Core Plan (OSCP) and California Marine Waters Appendices.~~ The SSRP shall be provided to the CSLC, the California State Fire Marshal, and all jurisdictions along the pipeline ROW for review and comment prior to its finalization, and it must be approved by CSLC in conjunction with the California State Fire Marshal prior to the start of pipeline operation. The SSRP shall include the following lists or information:

[. . .]

- **Pipeline Failure in an Urban Environment (applicable in the Cities of Suisun City, Benicia, Fairfield, and West Sacramento), specifically describing response strategies requiring traffic control/diversion, prevention of product flow**

into storm drains, recovery of spilled product from storm drains or river systems, crowd control, and protection of users of nearby sensitive land uses (schools, hospitals, etc.). The strategy for responding to an urban spill shall specifically address and define appropriate response to fire and/or explosion. Where aspects of emergency response are handled or directed by local Fire Departments or other agencies, those agencies shall be contacted for input into the SSRP.

- **Spill Reaching the Delta or Carquinez Strait, specifically identifying sensitive habitats with priority for protection, sensitive species and their potential locations in the affected Delta, marine and coastal environment. The response strategy shall list sensitive species potentially occurring in the waterway or in the Strait, and describe methods of protecting those species in the event of the worst-case spill event. It shall define specific cleanup methodology and techniques for containment and cleanup in the harbor and on the shoreline.**

SFPP or its spill response contractor shall use the SSRP to evaluate ~~store~~ storing equipment within one-half mile of the pipeline route between MP 9 and MP 15 to allow fast response to a spill that could affect the slough/marsh areas east of the route. Prior to pipeline operation, SFPP shall submit to the CSLC and the California State Fire Marshal for review and approval the proposed location of the equipment and the proposed list of spill response equipment.

Page D.2-36, under Impact S-2: Operational Pipeline Accident Causing Injuries or Fatalities —

S-2b ~~Monthly~~ Leak Detection ~~Tests~~. The Applicant shall perform regular shut-in leak detection tests routinely, when the line is not flowing. The Applicant shall also install and maintain a leak detection system that has the capability of detecting unintentional releases in accordance with Table D.2-26, or a leak of 0.9 percent of the maximum pipeline flow-rate (9550 BPH) in 20 minutes. ~~monthly~~. ~~These "stand-up" tests shall be held for a period sufficient to detect a 5 BPH release, but in no case for less than 12 hours. This will reduce the potential release volumes of slow releases by a factor of twelve.~~

S-2c Valve ~~Location~~ Review. At least 60 days prior to beginning construction, SFPP shall provide to the CSLC and the California State Fire Marshal for review and approval the documentation on all pipeline valves (including those added as a result of analytical assessment of the fault crossings and ground settlement and mitigation measures in the EIR), locations, technical specifications, foundation design details and piping and instrumentation diagrams, etc~~, including those added as a result mitigation measures in the EIR~~. The ~~review~~ submittal shall include the following:

- **A detailed pipeline profile that clearly illustrates the topography, valve locations, and proposed method of actuation, along the final route.**
- **The Applicant shall analyze at least 50 low points along the pipeline. The analyses shall be similar to those provided in Section D.2.3.7 for four spill scenarios. Where manual valves are being proposed, the affect of converting the valve to remote or automatic operation shall be presented. Where converting a valve from manual to remote or automatic operation would result in a significant reduction in spill volume, the Applicant shall either convert the valve to remote or automatic operation, or provide a compelling feasibility**

discussion. (At least one low point shall be analyzed between each set of proposed valves. The points selected for analysis shall be representative and shall be spread relatively evenly along the pipeline. Environmentally sensitive receptors shall be analyzed.)

- **Specific information on ~~A specific review of~~ the location of the proposed check valve at MP 20.1. An analysis shall be conducted to determine if the check valve would be more effective if it were relocated upstream of the hill which rises to an elevation of about 80 feet.**

S-2d Prevent Third-Party Damage. Between Mileposts 24.5 and 28.3 (Fairfield/Suisun City) and Mileposts 68.5 and 69.0, SFPP shall evaluate~~implement~~ measures defined in API 1160 for prevention of third-party damage. SFPP shall propose ~~evaluate these measures presented in API 1160 and propose~~ specific design features for recommended implementation in these areas. This information shall be presented to the CSLC and the California State Fire Marshal for review and approval at least 60 days before the start of construction.

[. . .]

SFPP will perform a baseline internal inspection (smart pig) run after pipeline construction is complete. They plan to perform subsequent smart pig runs in accordance with 49 CFR 195.452, at intervals ~~a frequency~~ not exceeding once every five years.

Page D.2-38, under Impact S-2.1: External Corrosion —

- **Rectifier Readings.** As required by 49 CFR 195.573~~416 (c)~~, ~~"Each operator shall,~~ Pipeline operators are required to inspect their cathodic protection rectifiers at intervals not exceeding two-and-one-half months, but at least six times each calendar year~~, inspect each of its cathodic protection rectifiers."~~
- **Monitor Cathodic Protection Systems~~Pipe to Soil Readings~~.** At least once each calendar year, at intervals not exceeding 15 months, hazardous liquid pipeline operators are required to test their cathodic protection system ~~by taking pipe to soil readings~~ in accordance with 49 CFR 195.573~~416 (a)~~.
- **Corroded Pipe.** The strength of any pipe known to be corroded would normally be evaluated using ASME B31G, *Manual for Determining the Remaining Strength of Corroded Pipelines*. This method considers the size, shape, and remaining wall thickness of corroded pipe to determine its safe operating pressure.
- **Inspections.** Each time buried pipe is exposed for any reason, it would be examined for evidence of external corrosion in accordance with 49 CFR 195.569~~416 (e)~~. If active corrosion is found, the operator is required to investigate and determine the extent.
- **Maintain Records**. Pipeline operators are required to maintain records of the DOT required inspections.

Two situations must generally occur for an external corrosion caused unintentional release to result – coating defect and inadequate cathodic protection.

The Applicant has proposed protecting the pipeline from external corrosion using an impressed current system. However, interference from other substructures, local soil conditions, and other factors can render an impressed current system inadequate in localized areas.

A close interval cathodic protection survey, conducted with both on-off rectifier readings, can often identify locations with cathodic protection levels below acceptable levels; these surveys can also be used to identify stray currents, which can affect cathodic protection system performance. (These surveys involve taking pipe to soil readings approximately every three feet along the entire pipeline.)

DCVG Coating Anomaly (Pipe Camp) Surveys are used to identify localized areas of coating damage that could lead to future leaks or ruptures.

Mitigation Measure S-2f is recommended to ensure that adequate cathodic protection levels are maintained throughout the operating life of the pipeline.

Mitigation Measures for Impact S-2.1: External Corrosion

S-2e Conduct Pipeline Inspections. The Applicant shall conduct an internal pipeline inspection, using a modern instrumented internal inspection device (smart pig) and a caliper tool within 90 days of initial pipeline operation startup. ~~as soon as practical immediately after construction has been completed but before operation.~~ Subsequent internal inspections shall be conducted ~~within six months of the anniversary date of the first inspection,~~ every five years, or in accordance with 49 CFR 195, whichever occurs first. Defects shall be repaired in accordance with applicable codes, industry standards, and regulations.

S-2f Ensure Proper Cathodic Protection. The Applicant shall conduct a close interval survey or DCVG coating anomaly (pipe camp) survey over the entire length of the new pipeline within six months of the hydrostatic test performed prior to operation. The surveys shall be conducted in accordance with NACE standards~~, using both on and off rectifier readings~~. If inadequate cathodic protection levels, ~~or~~ cathodic protection interference, or coating damage is identified, these situations shall be corrected. The Applicant shall submit a report, documenting the survey(s) and repair(s) ~~results of the close interval inspections and any intended action~~ to CSLC and Office of the California State Fire Marshal, Pipeline Safety Division (and any other agency with permit jurisdiction), within six months after completing the ~~close interval~~ survey(s). ~~Additional test stations shall be installed within any section found below NACE recommended levels or in areas with cathodic protection system interference; the location and spacing of these test stations shall be reported to CSLC (and any other agency with permit jurisdiction). Subsequent close interval surveys shall be conducted within six months of the DOT required annual cathodic protection survey, on sections of pipeline that show cathodic protection levels below NACE recommended levels. The Applicant shall submit a report, documenting the results of these subsequent close interval inspections and any intended corrective action to CSLC (and any other agency with permit jurisdiction), within six months after completing the close interval survey. These other agencies may include, but are not limited to, Office of the California State Fire Marshal Pipeline Safety Division, the United States Department of Transportation Office of Pipeline Safety, and any other agency with environmental permit or land ownership responsibilities.

To ensure protection of the City of Benicia's sole source water pipeline and to monitor potential effects, SFPP shall provide a list of two to three independent corrosion engineers for City concurrence and selection to review cathodic protection test data for a period of one year after installation of the new products pipeline. SFPP shall fund this part-time position and any costs to remedy any identified problems related to cathodic protection.

(These requirements are more restrictive than the minimum requirements included in 49CFR 195.)

Page D.2-39, under Impact S-2.2: Internal Corrosion —

Internal corrosion is another cause of unintentional pipeline releases. Although refined petroleum products are generally not considered corrosive, 49 CFR 195.579, Subpart H~~.418~~ outlines the regulatory requirements for internal corrosion control and monitoring.

Page D.2-40, under Mitigation Measure for Impact S-2.3: Third Party Damage —

S-2g Pipeline Markers. The Applicant shall install and maintain durable line markers in accordance with 49 CFR 195 and in sufficient quantity and at such locations to ensure continuous line-of-site marking along the pipeline (two line markers visible from any one location); however, markers shall in no case be installed more than 1,000 feet apart. Markers shall also be installed and maintained on each side of all paved and unpaved road crossings, on each side of all railroad crossings, and on each side of all waterways.

For new pipeline construction, a minimum 3" wide, 6 mil, polyethylene marking tape shall be installed 12-inch to 18" beneath the finished ground surface over the top of the pipeline~~, at each edge of the pipe ditch, within 12 to 18" of the pipe centerline~~. An appropriate warning shall be printed on the tape (e.g., "Warning – Hazardous Liquid Pipeline"). As an alternative, the Applicant may propose to the CSLC to install an optical or electronic intrusion detection system, increase the depth of cover, or increased wall thickness to mitigate the potential for third party incidents, as described in Section 10 of API Standard 1160, *Managing System Integrity for Hazardous Liquid Pipelines*.

The Applicant shall also coordinate with Federal, State, and Local agencies conducting, or planning to conduct, construction activities in the area surrounding the pipeline (e.g. Caltrans, Solano Transportation Authority, Cities, etc.) These agencies shall be included in the Applicant's Public Awareness Program, which is required by 49 CFR 195.

Residual Impact. Even with implementation of Mitigation Measure S-2g, the likelihood of occurrence of Impact S-2.3, third party damage to cause pipeline accidents remains high so the impact remains significant (Class I), **requiring that the CSLC prepare a Statement of Overriding Considerations for project approval**.

Page D.2-41, under Impact S-2.5: Design Flaw (Engineering) —

Design flaws or incomplete/inadequate engineering can contribute to likelihood of a pipeline accident. (~~Less Than~~ Potentially Significant, Class ~~III~~II)

[. . .]

Pipeline Design Review. Prior to final approval of the construction of the Proposed Project, the applicant will submit the final engineering design and construction drawings as issued for construction, certified by the California registered engineers licensed to practice in their jurisdiction (Civil/Structural, Mechanical and Electrical) for CSLC and CSFM review and approval. ~~Prior to final approval of the construction drawings, the CSLC and Office of the California State Fire Marshal will conduct an independent third party design reviews of the Applicant-proposed construction drawings and specifications.~~ The intent of this review and observation would be to help ensure adherence with the project mitigation measures, the project construction drawings and specifications, and the minimum regulatory requirements. Further, this effort would help ensure that the Applicant-proposed design measures are actually constructed, project specific needs are met, and the adopted mitigation measures are incorporated into the design and pipeline construction. In addition, compliance with the applicable codes, standards, regulations, industry practices, etc. would be verified. The design review and construction observation services would not in any way be intended to relieve the Applicant of its responsibility and liability for the design, construction, operation, maintenance or emergency response of these facilities.

Page D.2-42, under Mitigation Measure for Impact S-2.5: Design Flaw —

~~Assuming CSLC implementation of design review defined above, no additional mitigation is required.~~

S-2h Design and Design Approval. a.) SFPP shall construct and operate the Proposed Project to meet the Federal standards outlined in the U.S. Department of Transportation's (DOT) regulations in Title 49 CFR Part 195, transportation of Hazardous Liquids By Pipeline. SFPP shall also design all project facilities to meet or exceed the latest edition of Uniform Building Code (UBC).

In California, the CSLC requires the incorporation of current seismological engineering standards such as the *Guidelines for the Design of Buried Steel Pipe* (by American Lifeline Alliance), *Guidelines for the Seismic Design of Oil and Gas Pipeline Systems* (by American Society of Civil Engineers, and other recognized industry standards for seismic resistant design at all fault crossings and liquefaction zones in California. The CSLC also requires all engineering design calculations and construction drawings, including pipeline alignment sheets, pipeline profile drawings wherever necessary, associated facilities and other appurtenances to be certified by California Registered Professionals (Civil/ Structural, Geotechnical, Mechanical and Electrical, etc.) licensed to practice in their jurisdiction. SFPP shall submit these design and drawings for review and approval by the CSLC and CSFM.

b.) SFPP shall submit hydrotest profile drawings and detailed hydrotest procedure for each test segment for CSLC and CSFM review and approval. The procedure shall include but not be limited to quantitative method of analysis of the test results, test duration, test pressure, how long the pipeline segment will be allowed to reach temperature equilibrium, types of temperature and pressure recorders and their calibration, etc.

c.) SFPP shall provide the following documents to the CSLC and CSFM within 120 days of the completion of the work:

- **a set of "as-built" construction drawings, certified by a California registered Civil/Structural engineer, showing all design changes or other amendments to the construction as originally approved;**

- **certified copies of all completed pipeline integrity test results (hydrostatic tests, gauging runs, etc.) including copies of any failed tests with an explanation of the reason for failure; and**
- **a post-construction written narrative report confirming completion of the project with discussion of any significant field changes or other modifications to the approved design or execution plan, and providing details of any extraordinary occurrences such as spill incidents and accidents involving serious injury or loss of life, and a summary of a quality control and weld inspection program including all failed and repaired welds.**

Residual Impact: Mitigation Measure S-2h, coupled with compliance with the existing federal and State regulations would minimize the risk of accidents caused by design flaws to less than significant levels (Class II)~~Less than significant (Class III)~~.

Page D.2-45, under D.2.3.7 Spill Scenarios —

The analysis of a worst-case release at each of these sites was based on the ability of the Applicant's proposed leak detection system to identify an unintentional release, the anticipated response time of an operator, the location of remotely operated block valves, the location of manually operated block valves, the terrain, the time required to reach the manual block valves to close them, and the anticipated time required for initial emergency response equipment (e.g., vacuum trucks) to access the site. (The methodology, including the response times and other assumptions for these analyses were presented earlier, in Section 2.3.5.) Potentially significant environmental impacts associated with pipeline spills are addressed elsewhere throughout this document (e.g., in Section D.4.3.4 for Biological Resources, Section D.8.3.4 for Hydrology and Water Quality, and Section D.9.3.4 for Land Use).

Page D.2-45, under D.2.3.7 Spill Scenarios, Scenario #1 —

The terrain generally slopes downward, and the valves are located very close to the crossing. Additional valves would not appreciably decrease the release volume on this segment. However, Mitigation Measure S-2b (above) is recommended to reduce the impacts associated with slow releases ~~(1 BPH)~~ in this sensitive area by requiring ~~monthly~~ leak detection ~~tests~~. This would reduce the volume that could be released from a potential worst-case of 8,760 barrels (or a reasonable worst-case of 4,000 barrels) ~~to 730 barrels~~. The impact of a pipeline accident is still considered to be significant (Class I).

Page D.2-46, Table D.2-32, last two rows removed —

~~Total mitigated unintentional release volume~~	~~N/A~~	~~1,119~~	~~N/A~~	~~314~~	~~1 month~~	~~730~~
~~Percentage reduction~~	~~N/A~~	~~0%~~	~~N/A~~	~~0%~~	~~N/A~~	~~81%~~

Page D.2-47, Table D.2-33, changes to last two rows —

Total mitigated unintentional release volume	N/A	4,622	N/A	435	~~1 month~~N/A	4,000~~730~~
Percentage reduction	N/A	10%	N/A	0%	N/A	0~~81~~%

Page D.2-48, Table D.2-34, last two rows removed —

~~Total mitigated unintentional release volume~~	~~N/A~~	~~9,108~~	~~N/A~~	~~435~~	~~1 month~~	~~730~~
~~Percentage reduction~~	~~N/A~~	~~0%~~	~~N/A~~	~~0%~~	~~N/A~~	~~81%~~

Page D.2-49, Table D.2-35, last two rows removed —

~~Total mitigated unintentional release volume~~	~~N/A~~	~~10,153~~	~~N/A~~	~~435~~	~~N/A~~	~~730~~
~~Percentage reduction~~	~~N/A~~	~~0%~~	~~N/A~~	~~0%~~	~~N/A~~	~~81%~~

Page D.2-49, under D.2.3.7 Spill Scenarios, Scenario #4 —

For a pipe rupture, a rough hydraulic analysis indicated that once the MOVs have been closed, the 8,400 BPH flow rate should slow to approximately 3,311 BPH. Once the manual block valve has been closed, the potential drain down volume drops to 6,842 barrels. A rough hydraulic analysis determined that the 8,400 BPH flow rate would be approximately 2,607 BPH after manual block valve closure. Therefore, although there is a potential for 22,428 barrels to be released, it is likely that, even in a worst-case pipeline rupture, only 10,153 barrels would be released before emergency response equipment capable of containing the release arrives on site. Although implementation of Mitigation Measure S-2c (above), would minimize impacts by requiring a review of valve locations, the impact of a pipeline accident remains significant (Class I).

Page D.2-50, Section D.2.3.10 —

D.2.3.10 Impacts of Pipeline Abandonment or Removal from Service

Impact S-3: Pipeline Abandonment or Removal from Service

Improper pipeline abandonment could cause contamination, landslides, or erosion. (Less Than Significant, Class II)

Pipeline operators generally proposed to abandon pipelines in place. This normally involves displacing the pipeline contents with nitrogen. This practice of purging abandoned pipelines with nitrogen may not remove all products. This practice, in lieu of pipeline removal, also poses the potential for the abandoned pipe to become a future conduit for underground or surface waters, after it deteriorates. Further, the soil above the pipeline could settle after the pipe deteriorates. ~~Also, this~~ This abandonment process would also apply to the process of taking the existing 14-inch pipeline out of service; this would occur after the Proposed Project is operational (see description in Section B.3.4).

Page D.2-51, under Impact S-3: Pipeline Abandonment or Removal from Service —

If all of the free product is not removed, it could leak from the pipe as it deteriorates. If the pipe acts as a conduit for underground water, it could cause landslides, erosion, and other damage. If the soil settles, it can redirect surface water flows, causing localized erosion. The impacts associated with the pipeline abandonment are presented in Table D.2-38. Mitigation Measure S-3a is recommended to reduce potential impacts of pipeline abandonment or removal from service.

Page D.2-51, under Impact S-3: Pipeline Abandonment or Removal from Service —

Mitigation Measure for Impact S-3: Pipeline Abandonment or Removal from Service

Page D.2-51, under Mitigation Measure for Impact S-3: Pipeline Abandonment or Removal from Service —

S-3a Pipeline Abandonment Procedures. Once the majority of the product has been removed, a series of foam pigs shall be pushed through the abandoned pipeline to remove any residual product. This process shall be repeated until the residual hydrocarbons in pipeline are reduced to a level acceptable by the permitting agencies. Generally, CSLC requires that prior to abandonment of the pipelines in its lease areas, the pipelines shall be cleaned of all hydrocarbons until the residual hydrocarbons are less than 15 parts per million unless other agencies such as Regional Water Quality Control Board or other permitting agencies require more stringent clean up level. ~~This process shall be repeated until the pigs are free of residual product.~~

Over time, local land uses and other site environments will change. As a result, it would be impossible to prepare a plan that would adequately cover future abandonment at this time. As a result, SFPP shall submit a site-specific detailed report including but not limited to pipeline integrity information, pipeline clean up procedures, pipeline abandonment procedures, anticipated frequency of future inspection, and spill containment, response and cleanup procedures, etc. to the CSLC and the California State Fire Marshal (CSFM), at least 60 days prior to pipeline abandonment/ removal, for their review and approval. ~~As a result, the Applicant shall submit a site-specific letter report to the CSLC or any other agency with permit authority, at least 60 days prior to any pipeline abandonment.~~ The report shall evaluate any potential risks that could be imposed by the deteriorated pipe acting as an underground conduit and any potential negative effects of soil settlement, should the pipe be left to deteriorate. If the ~~CSLC, Office of the California State Fire Marshal, or any other~~ responsible agency determines that abandoning these segments in place may cause adverse effects to the specific land uses at certain locations, the abandoned sections shall be removed or shall be filled with concrete, grout, or clean drilling mud, to avoid potential impacts. The specific action shall be determined by the CSLC, in conjunction with the CSFM, ~~and other responsible agencies~~ after review of the Applicant's site-specific detailed ~~letter~~ report.

With respect to the removal from service of the existing 14-inch pipeline, SFPP shall submit a written Reclassification Plan (consistent with CSFM requirements and the description in Draft EIR Section B.3.4) describing the process and schedule for removing that pipeline from service. The Draft Plan shall define anticipated future uses of the pipeline and shall be submitted to the CSFM and the CSLC for review and comment at least 120 days prior to operation of the new pipeline.

Page D.2-52, Section D.2.3.11 added just before D.2.4 —

D.2.3.11 Cumulative Impacts

Section E.1 presents a list of projects that may be constructed concurrently with the Proposed Project. Many of these projects include the development of residential, commercial, and industrial areas in the

vicinity of portions of the Proposed Project and the identified project alternatives. It is reasonable to assume that development in some areas will continue throughout the project life.

The *California Hazardous Liquid Pipeline Risk Assessment*, prepared for the California State Fire Marshal analyzed the frequency of pipeline incidents for pipelines within and outside Standard Metropolitan Statistical Areas (SMSAs). Although the data did not facilitate a statistical analysis, the study found that the frequency of unintentional releases was roughly three times higher for lines within SMSAs, than those outside SMSAs. The frequency of third party caused unintentional releases was roughly twice as high for lines within SMSAs than it was for pipelines outside SMSAs. The vast majority of the difference between SMSA and non-SMSA incidents was the frequency of unintentional releases caused by external corrosion. The frequency of external corrosion caused unintentional releases was nearly five times higher in SMSAs than non-SMSAs. (See also Section D.2.3.5.)

Mitigation Measures S-2e and S-2f have been proposed to minimize the potential for unintentional releases caused by external corrosion. Mitigation Measure S-2g has been proposed to reduce the frequency of third party damage caused unintentional releases. These measures exceed the minimum regulatory requirements of 49 CFR 195. They would help reduce the frequency of unintentional releases in urban areas throughout the project life.

Unfortunately, data is not available to quantify the effects of the proposed mitigations. The likelihood of unintentional releases throughout the project life was developed based on historical data. The pipelines included in the historical data set are generally not operated and maintained in accordance with the proposed mitigations. As a result, the anticipated frequency of incidents used in the analysis is somewhat conservative. With the proposed mitigations, this conservatism is sufficient to reflect any additional risk as areas are urbanized throughout the project life. The cumulative impact from anticipated urbanization is within the somewhat conservative predicted frequency of unintentional releases presented herein.

D.3 Air Quality

Page D.3-10, under Mitigation Measure for Impact A-1: Onsite Equipment Exhaust Emissions —

- **Operate any equipment associated with the hydrotest and pipeline cleaning phase only ~~when the use of all other equipment is completed~~after major construction and excavation activities are completed.**

Page D.3-12, under Mitigation Measure for Impact A-2: Particulate Emissions —

- **Pave, apply water to maintain continuously moist soil, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, construction areas, and staging areas as needed.**

[. . .]

- **Enclose, cover, water twice daily or apply (non-toxic) soil binders to large exposed stockpiles (dirt, sand, etc.) as needed.**

[. . .]

- **~~Wash~~ If necessary to prevent mud from tracking onto pavement, wash off the tires or tracks of all trucks and street-legal construction equipment leaving unpaved ~~sites~~ staging areas greater than four acres in area to paved roads.**

Page D.3-13, under Mitigation Measure for Impact A-3: Offsite Pipeline Construction Emissions —

- **Provide, to the maximum extent feasible, carpooling and shuttling of workers from the staging areas to the work spreads.**

Page D.3-16, under Impact A-6: Pipeline Operation —

Pipeline Power Consumption. Offsite emissions can be generated by power plants generating the electricity to operate the pipeline because electric pumps are used to ship the product from Concord to Sacramento. Proposed upgrades to the shipping pumps involve replacing impellers to increase their capacity. Because ~~no~~ pumping system upgrades are proposed for the ~~shipping pump motors~~purpose of improving pump efficiency, project-related electricity consumption for shipping is assumed to be similar to existing conditions. The proposed 1,200-horsepower surge pump motor would consume approximately 895 kilowatts of electricity per hour of use. Emissions from electricity generation would occur at power plants located throughout the State. The Project Description does not include new backup generators in case of emergency during a power failure, but if such equipment would be necessary for the Proposed Project, the local stationary source permitting requirements would apply. Offsite emissions from power plants are shown in Table D.3-10; they were calculated with factors for electricity generation published by the South Coast Air Quality Management District in 1993. The emissions and the associated air quality impact would be less than significant (Class III).

Page D.3-18, under D.3.3.7, Concord Station —

Proposed upgrades to the Concord Station would include a new surge pump, replacement shipping pumps, a new hydraulic power system for the new surge system, and new piping, meters, instrumentation, and controls. Emission increases associated with increased use of the existing storage tanks at the Concord Station and operation of the proposed new 1,200 hp surge pump are discussed in Section D.3.3.6 above with other operational emissions. Other new piping and equipment would cause minor increases in fugitive VOC emissions. As shown in Table D.3-11 above, the net emission increases at the Concord Station would be less than significant (Class III).

D.4 Biological Resources

Page D.4-15, under D.4.1.2 Environmental Setting: Proposed Project, Vegetation and Wetlands, Phase 1 Carquinez Strait Crossing —

Currently, Rhodia Inc., the property owner for a portion of the pipeline ROW adjacent to the southern bank of the Carquinez Strait, is working with a group of regulatory agencies to develop the Peyton Slough Remediation and Restoration Project. A portion of the Peyton Slough project will be constructed on lands owned by the CSLC, Shore Terminal, LLC and Rhodia, Inc. Habitat for the state-threatened California black rail, California clapper rail and salt marsh harvest mouse is found at the site. The project will involve remediating soils contaminated with copper and zinc in, and adjacent to, Peyton Slough, in accordance with the San Francisco Bay Regional Water Quality Control Board (RWQCB) Cleanup and Abatement Order No. 01-094. The overall project involves: (1) excavating a new alignment for Peyton Slough just east of the existing Slough and rerouting water flow, (2) removing dredge spoil piles adjacent to Peyton Slough, (3) dewatering and capping the existing Slough in-situ, and (4) implementing a restoration plan that would revegetate the impacted wetlands, providing for the restoration of the California black and clapper rail habitat, and the new cap.

Page D.4-15, under D.4.1.2 Environmental Setting: Proposed Project, Vegetation and Wetlands, Phase 2 Carquinez Strait Crossing —

The Peyton Slough Remediation Project would realign Peyton Slough, cap remaining contamination within the alignment of the existing slough, and biologically enhance the area habitat.

Page D.4-16, under D.4.1.2 Environmental Setting: Proposed Project, Marine Biology, Phase 1 Carquinez Strait Crossing —

Peyton Slough is tidal north of the tide gate structure and has been surveyed for marine biota. In 1990, benthic invertebrates were collected by grab samples at three locations in Peyton Slough as well as at a fourth station at the mouth of the slough (Entrix, 1991). Twenty taxa of benthic invertebrates were collected at the four stations. The most abundant species in the slough was the introduced estuarine worm *Streblospio benedicti*. The Asian clam (*Potamocorbula amurensis*) dominated the mudflat station at the mouth of the slough. The Asian clam accounted for 94 percent of the total catch in the mudflat but comprised a relatively low portion of the animals collected within the slough.

Page D.4-31, under D.4.2.3 Regional and Local —

County and City General Plans. Yolo, Solano, and Contra Costa Counties all have General Plans with elements that include Land Use, Open Space, and Conservation. The conservation aspects of these plans address biological resources. Yolo County published "Yolo County General Plan, Part I: The Plan" in July 1983. Solano County prepared a General Plan in 1967 and has updated portions of this plan by element and by geographic region more recently. Contra Costa County published "Contra Costa County General Plan 1995-2010" in July 1996.

In addition, some city General Plans address biological resources issues. The City of Benicia General Plan includes Goals 3.19, 3.20, and 3.21 related to protection of wetlands, vegetation, and habitat.

Page D.4-37, under Impact BB-2: Construction Effects on Rare or Special Status Plants —

Within Segment 1 only, information provided by SFPP does not document that b~~B~~otanical surveys of the project area conducted by URS were ~~not~~ appropriately timed with the blooming period of one special status plant species, fragrant fritillary, which has the potential to occur along the project area. Although

the cited blooming period for these species is February through April, the optimum bloom period is in mid-March. However, the earliest botanical survey conducted by URS was in early April, which was probably not early enough to determine the presence or absence of these species within the project area. Construction and related activities causing direct impact to these species or its habitat and would be considered potentially significant (Class II). Implementation of Mitigation Measure BB-2a (Rare Plant Avoidance) for Segment 1, requiring appropriately timed pre-construction survey to map and flag locations supporting these species (if located) for avoidance during construction, would reduce this impact to less than significant levels. The loss of individuals or known habitats of rare, threatened, or endangered plant species would be considered a significant impact. Such impacts are possible where construction and related activities would remove or impact the buffer zone for species, such as Suisun marsh aster and hogwallow starfish. Construction activities resulting in the removal of a special status plant species would be considered potentially significant (Class II).

Page D.4-38, Mitigation Measure BB-2a —

Note: The title of this mitigation measure has been changed from "Rare Plant Avoidance" to "Rare Plant Avoidance or Potential Impact". This change, which is reflected throughout this Final EIR, is not repeated hereafter.

BB-2a Rare Plant Avoidance or Potential Impact. SFPP shall avoid impacts to special status plant species by:

- **Conducting pre-construction surveys for special status plant species within un-surveyed locations of the proposed ROW (between MP 30.7 – 33.2 and 37.2 – 37.9) and for certain plant species that were not surveyed during the appropriate flowering period.**
- **Flagging, mapping, and fencing to protect any special status plant species within the 1~~2~~00-foot-wide ~~Study Area~~construction ROW and work areas, staging areas, and/or launcher/receiver stations during construction. Fencing shall be placed at the edge of the ROW in areas where special status plant species are present within 20 feet outside of the ROW.**
- **Limiting all proposed roadway construction to the existing road~~way surface(s)~~ ROW where adjacent special status plant species occur, i.e., adjacent Contra Costa goldfield populations at access road near Ornbaum Kennels (MP 19.7 – 19.8), Cordelia Road (MP 22.9 – 23.2), Walters Road (MP 28.1 – 28.7), Peabody Road (MP 29.8 – 23.2), and Carquinez goldenbush occurrences along Hay Road (MP 38.9).**
- **A worker training program with regard to special status species (see BW-1c).**
- **Supervision and verification of the implementation of these measures by an agency-approved Environmental Monitor (see BW-2b).**

Prior to construction, the location of special status plant species will be determined through appropriately-timed surveys according to California Native Plant Society (CNPS) protocol; this shall apply only to ~~(1)~~ areas not surveyed during previous surveys that support potential habitat for any rare plant species. ~~, and (2) the rare *Fritillaria* species for the identified project segments with potential habitat (i.e., serpentine or clay soils) for which appropriately-timed surveys were not conducted during previous survey efforts along the pipeline right-of-way (ROW).~~ Determination of potential habitat for rare species, and surveys conducted for presence of rare plant species will be performed by a

qualified botanist. These surveys will be appropriately timed to cover the blooming periods of the special status plant species with the potential to occur in the area.

Any rare plant species within the ~~Study Area (including the~~ 100-foot-wide ROW, 50-foot-wide buffer zone on each side of the ROW, work areas, staging areas, and/or launcher/receiver stations~~)~~ will be flagged, accurately mapped on construction plans, and fenced to protect the area occupied by the species during construction. Installation of construction fencing shall be supervised by an Environmental Monitor (a qualified biologist approved by the CSLC, USFWS, and CDFG), and appropriate buffer distances from the rare plant population shall be determined on-site by the Monitor. The Monitor shall have the authority to require installation of silt fencing in highly sensitive areas or under certain conditions where potential erosion may impact a special status plant species or its habitat.

In the unlikely event that through the pre-construction surveys the biological monitor identifies special status plant species within the ROW where the construction contractor cannot implement avoidance measures, SFPP shall provide compensation for impacted plants. SFPP shall coordinate mitigation or compensation for lost plants with CSLC and CDFG and/or USFWS, as appropriate, prior to any ground disturbance. Impacts to State or federally listed plant species would require consultation and/or a permit or Memorandum of Understanding from CDFG or the USFWS.

Compliance with these measures prior to and during construction will be supervised and verified by the Environmental Monitor.

Residual Impact. With the implementation of Mitigation Measure BB-2a (Rare Plant Avoidance or Potential Impact), impacts would be reduced to less than significant.

Page D.4-39, under Mitigation Measure BB-3a —

The initial step for this measure shall be to determine the size and location of all native and protected trees located within and adjacent to the project right-of-way, work areas, staging areas, and launcher/receiver stations. These trees will be then assessed by a qualified biologist or arborist to identify and map Protected Trees.[1] If it is determined that the project will trim, remove, or damage the roots of Protected Trees, avoidance measures shall be taken. Avoidance will consist of installing protective fencing around the dripline of any Protected Tree. All construction activities, including excavation, grading, leveling, and disposal or deposition of harmful materials will be prohibited inside the dripline fence. Attachment of wires, ropes, or signs to native and Protected Trees shall also be prohibited. The approved Environmental Monitor (see BW-2b) shall supervise compliance with these protective measures prior to and during construction activities.

~~Page D.4-40, under Mitigation Measure BB-3a —~~

[1] Protected Trees are those protected under local ordinances and include the following: (1) Contra Costa County requires a permit and conditional mitigation for impacts to or removal of "Heritage Trees" and "Protected Trees", (2) Yolo County identifies a provision prohibiting the import or export of Elm trees, (3) the City of Fairfield requires submission of a written request to remove any tree on private or public land, (4) the City of West Sacramento requires a permit and permittee-proposed mitigation measures for impacts to or removal of "Heritage Trees", "Landmark Trees", and "Significant Trees."

~~Proposed understory native seed mix composition and application methods in areas where a native understory is currently present.~~

Page D.4-43, under Mitigation Measure BB-5a —

Avoidance will consist of fencing the wetlands within the ROW, including appropriate buffer zones, to minimize impacts to wetland vegetation types. If construction work areas and/or associated overland travel in wetlands with pooled or ponded water is unavoidable, all equipment, vehicles and associated construction materials shall be placed on protective mats to avoid soil compaction, such that they do not make direct contact with the wetland. Vegetation clearing and/or installation of mats shall be conducted only from areas scheduled for immediate construction work (within 10 working days) and only for the width needed for active construction activities. Mats shall be removed immediately following completion of activities within each active construction area. During pipeline construction, the ~~12~~ 6 inches of topsoil shall be salvaged, stored in an upland location, and replaced wherever the pipeline is trenched in wetlands. Prior to permit issuance and final design, project construction plans shall depict appropriate measures for topsoil protection and storage that will allow survival of native seed within the topsoil. Topsoil shall be placed at the surface on top of fill material and not be used to backfill the trench, and excavated trench spoils or excess fill shall be placed on top of the pipeline under topsoil and not dispersed onto the surface of the ROW. Implementation of these measures prior to and during construction will be supervised and verified by the Environmental Monitor (see Mitigation Measure BW-2b).

[. . .]

- **At least 30 days prior to the start of construction on the Proposed Project, the applicant shall provide CSLC with copies of all required permits from agencies identified herein as having jurisdiction over wetlands. SFPP shall mitigate for any temporal loss of wetland values (form and function) as required by such agencies. This mitigation is in addition to normal revegetation and restoration of the area disturbed during construction. The applicant shall commit to one or more of the following: enhancing or restoring wetlands on site or in the immediate area of the proposed pipeline (such as removal of exotic vegetation or improving hydrology); removal of existing obstructions within the control of the applicant that are located in areas analyzed in the EIR and which impede or reduce wetland values; payment of a mitigation fee; or by funding the acquisition and preservation of additional wetland area. The form and function of mitigation for impacted areas will be monitored until the approved mitigation and monitoring program is successfully implemented, but for not less than a period of five (5) years or until pre-construction wetland functions and values have been demonstrated for at least two (2) years. The restoration program and mitigation for temporal wetland loss will be approved and managed by the USACE, the USFWS, SFRWQCB, or the CDFG.**

In the event that conditions in the USACE 404 permit and/or the USFWS Biological Opinion to be issued for this project conflict with mitigation measures in the EIR the CSLC shall reconcile such conflicts and ensure that the resultant requirements are no less protective of the environment.

Page D.4-44, under Mitigation Measure BB-5b —

Prior to construction, soil and grade restoration measures shall be provided to responsible agencies (including the RWQCB, CDFG, USACE, and County agencies) ~~shall evaluate soil and grade restoration measures to be implemented along the ROW~~. If a responsible agency indicates that these measures are not adequate, the Applicant shall revise the measures as required by the commenting agency. Restoration of wetlands directly impacted by pipeline construction is addressed in Mitigation Measure BB-5a. To prevent hydrologic impacts to wetlands and associated vegetation resulting from pipeline backfill activities the following procedures shall, at a minimum, be addressed, in accordance with any permit conditions issued by responsible agencies:

Page D.4-45, under Mitigation Measure BB-5c —

- **Identification and avoidance of riparian forest by boring under streams and riparian habitat ~~where feasible~~in the margins of Suisun Creek, Putah Creek, and an unnamed slough connected to the Toe Drain on the east side of the Yolo Bypass (near MP 65.7). In streams where open cut crossings are proposed in Table B-3 and where water is present, a qualified biologist shall review the area prior to construction to determine if boring is necessary.**
- **Consultation with CDFG to identify ~~for any~~ unavoidable impacts to riparian vegetation and to define appropriate restoration.**

[. . .]

- **The upper ~~12~~ 6 inches of topsoil shall be salvaged, stored at an upland location, and returned to the surface after trench backfilling is complete.**
- **Existing vegetation shall be cleared only from areas scheduled for immediate construction work (within 10 working days).**

Page D.4-47, under Mitigation Measure BB-6a —

- **Vehicles used in pipeline construction will be cleaned prior to operation off of maintained roads each time they enter pipeline segments where sensitive natural communities are present. Segments with sensitive natural communities include the grassland and vernal pool habitats located from MP 44.6 to 45.3 and MP 52.7 to 53.9, the oak woodlands and grasslands between MP 12.8 and MP 14.7 and the grasslands in the watershed of the Contra Costa goldfields occurrence between MP 19.7 and MP 19.9.**
- **Any imported f~~F~~ill material, soil amendments, gravel etc. required for construction/restoration activities and would be placed within 12 inches of the ground surface in non-urban settings shall be obtained from a source that can certify the ~~soil~~ materials as being "weed free."**

[. . .]

- **During pipeline construction, the upper 6~~12~~ inches of topsoil (or less depending on existing depth of topsoil) shall be salvaged and replaced wherever the pipeline is trenched through open land (not including graded roads and road shoulders).**

Page D.4-50, Mitigation Measure BW-1e —

BW-1e Minimize Disturbance at Water Crossings. The Applicant shall perform no open trench crossings at any stream, wetland feature or other waters of the United States unless otherwise identified in an approved Streambed Alteration Agreement, U.S. Army Corps of Engineer 404 Permit, and/or any other required and approved permits. Such crossings shall be performed either by conventional directional bore or horizontal directional drilling. ~~The pipeline shall be directionally drilled or bored under streams that could support special status species or other resources of special value (e.g., riparian habitat).~~

Where sensitive resources are identified within the ROW, such resources shall be avoided by minor rerouting of the pipeline, or construction during a time of year when sensitivity is low (e.g., to avoid nesting birds). Unless specifically approved by the CDFG, no construction activities shall be conducted within 15 feet of the top of bank or riparian stream or wetland vegetation. This 15-foot setback from riparian vegetation is considered an initial guideline that may be modified at specific sites following consultation with federal and State resource agencies, and as new information becomes available regarding wildlife habitat use.

SFPP shall acquire all permits and authorizations required by federal, State, regional and local jurisdictions to construct near areas with sensitive biological resources. Throughout the life of the project, additional species may be listed or designated as special status, and SFPP shall comply with any new requirements of the USFWS or CDFG for such species.

~~The Applicant shall perform no open trench crossings at any stream, wetland feature or other waters of the United States unless otherwise identified by a Streambed Alteration Agreement, U.S. Army Corps of Engineer 404 Permit, and/or any other required permits. Stream or wetland crossings shall be performed either by conventional directional bore or horizontal directional drilling.~~

For directional bores at streams that do not support sensitive wildlife resources within 500 feet of the construction site (e.g., at channelized or unvegetated waterways), a qualified biological monitor (BW-2a) shall visit the site ~~at least once daily~~periodically (generally on a daily basis) while boring or HDD operations are active, and provide a report to the CSLC.

Page D.4-52, under Mitigation Measure BW-2a —

- **Vehicles shall not exceed 15 mph on ~~the entire~~non-paved portions of the ROW or along designated portions of access roads if approved by the CSLC monitor. These locations will be determined during pre-construction surveys and identified on project maps prior to construction.**

Pages D.4-53 through D.4-56, Mitigation Measure BW-3a —

BW-3a Protect Special Status Wildlife. Where construction will occur within or near known or potential special status species habitat, as defined below, the Applicant shall perform the actions defined in the following paragraphs unless they are inconsistent with project permits/approvals from the USACE, USFWS, NOAA Fisheries, and/or CDFG. In this event, the CSLC shall reconcile such conflicts and ensure that the resultant requirements are no less protective of the environment. Appendix A of the Final EIR provides the draft Biological Opinion from USFWS, which provides conservation measures and other

measures to minimize incidental take to federal-listed vernal pool crustaceans, salt marsh harvest mouse, red-legged frog, giant garter snake, and delta smelt.

- **California Red-Legged Frog. In areas that are known to or could potentially support California red-legged frog habitat (identified in Appendix 1A), the Applicant shall perform pre-construction surveys (as required in Mitigation Measure BW-1a) to determine if this species is present at these and other locations that may support this species. Construction shall be timed to occur during the dry season (April 15 to October 15), or aestivation period to minimize take of dispersing frogs. If pre-construction surveys by the biological monitor identify red-legged frogs within or adjacent to the ROW, ~~no more than one week~~ immediately prior to ~~the start of construction in these~~ground disturbance in areas where they may occur, the ~~animals shall be captured by an agency-approved wildlife biologist.~~construction contractor shall not proceed until the animals disperse away from the construction corridor. If red-legged frogs do not disperse readily on their own, then the biological monitor shall consult with USFWS for guidance on appropriate measures before construction proceeds. The captured individuals shall either be relocated to appropriate habitat outside of the disturbance corridor or shall be held in captivity until construction is completed through their habitat. The decision as to whether and where to relocate the animals shall be made by the wildlife biologist in consultation with the USFWS, based on site-specific conditions affecting the animals' safety. For the red-legged frog, mitigation activities would have to occur within the framework of the biological opinion (USFWS), a memorandum of understanding (between CDFG and USFWS), or other permit or instruction coming from USFWS or CDFG pursuant to federal or State endangered species legislation. The ~~capture sites~~construction area shall be monitored during construction and appropriate measures taken ~~during construction~~ to ensure that ~~any relocated animals~~individuals do not move ~~back~~ into the construction corridor.**

- **Giant Garter Snake. In areas that are known to or potentially could support giant garter snake habitat (i.e., canal at MP 46.2, Water Crossing (WC) No. 30, and WC No. 31), the Applicant shall perform pre-construction surveys (as required in Mitigation Measure BW-1a) to determine if this species occurs in these areas. These surveys shall be conducted and coordinated within the guidelines and mandates provided in a Federal Biological Opinion for this species (as required in Mitigation Measure BW-3d). Construction in suitable uplands within 200 feet of aquatic habitat potentially occupied by giant garter snake shall be timed to occur between May 1 and October 1 when the garter snake is active to avoid direct take of individual snakes. SFPP shall implement USFWS's *Standard Avoidance and Minimization Measures During Construction Activities in Giant Garter Snake* (Thamnophis gigas) *Habitat* within identified habitat areas (http://sacramento.fws.gov/es/documents/ggs_appendix_c.htm). If pre-construction surveys by the biological monitor ~~have~~ identify~~ied~~ giant garter snake within or adjacent to the ROW immediately prior to ground disturbance in areas where they may occur, the construction contractor shall not proceed until the animals disperse away from the construction corridor. If giant garter snakes do not disperse readily on their own, then the biological monitor shall consult with CDFG and USFWS for guidance on appropriate measures before**

construction proceeds. ~~**then, no more than one week prior to the start of construction in these areas, the animals shall be captured by an agency-approved wildlife biologist**~~**. The captured individuals shall either be relocated to appropriate habitat outside of the disturbance corridor or held in captivity until construction is completed through their habitat. The decision of whether or not and where to relocate the animals shall be made by the wildlife biologist in consultation with the USFWS, based on site-specific conditions affecting the animals' safety. As with red-legged frogs, the mitigation activities for giant garter snake shall occur within the framework of the biological opinion (USFWS), a memorandum of understanding (between CDFG and USFWS), or other permit or instruction coming from USFWS or CDFG pursuant to federal or State endangered species legislation.** ~~**The capture sites shall be monitored during construction to ensure that any relocated animals do not move back into the construction corridor.**~~ **The construction area shall be monitored during construction and appropriate measures taken to ensure that individuals** ~~**of relocated species**~~ **do not move into the construction corridor.**

- **Special Status Vernal Pool Branchipods. No construction activities will take place without authorization from the USFWS within 250 feet of occupied vernal pools or swales, as determined by the 2002 wet season protocol surveys (Appendix 1A) and the 2003 surveys currently being conducted by URS unless the pipeline ROW is separated from the occupied habitat by a well-defined physical/hydrologic barrier.** ~~**These**~~ **The edge of the ROW adjacent to these locations will be flagged and/or staked (BW-1b) by the designated biological monitors (BW-2b) prior to approved construction activities. The findings of the 2003 wet season vernal pool branchipod surveys, and any proposed reroutes to avoid newly described populations, will be submitted to CSLC and the appropriate resource agencies prior to any construction-related activities (BW-3d). In areas that support vernal pool habitat within 250 feet of the ROW but were not surveyed due to access denial (i.e., the area east of Vanden Road between MP 30.7 and 33.2 and areas north of Hay Rd. between MP 37.2 and 41.9), presence of vernal pool branchiopods was assumed and mitigation will be provided in the project's Biological Opinion (BW-3d).**

[. . .]

- **Western Burrowing Owl.** [. . .]

Potential burrowing owl habitat shall be surveyed by a qualified biologist to determine the presence of nesting burrowing owls. No more than two weeks before construction, a qualified biologist shall conduct a survey for occupied owl burrows within 500 feet of the construction corridor in areas that support potential owl habitat. The survey shall conform to California Burrowing Owl Consortium protocol (April 1993), which includes up to four surveys on different dates if there are active owl burrows present. However, if owls have been passively excluded from potential nest sites prior to construction, as described below, the pre-construction survey would consist of one site visit conducted according to the protocol described above.

[. . .]

- **Salt Marsh Harvest Mouse and Suisun Ornate Shrew.** [. . .]
  - ~~**Conduct pre-construction presence-absence surveys (BW-1a).**~~**Prepare a Vegetation-clearing Plan in salt marsh harvest mouse habitat approved by**

the CDFG prior to construction. The Vegetation-clearing Plan shall include, but not be limited to, delineating the vegetation types within areas identified as salt marsh habitat, method of vegetation removal for each of the vegetation types, pre-marking vegetation for approved varying methods of removal, installing exclusion fencing as appropriate, and biological monitoring and reporting.

[. . .]

Vegetation within the construction ROW, pipe laydown areas, and directional drill work areas shall be removed using hand tools prior to the start of construction. ~~Hand tools may include hand-operated mechanical trimming devices where appropriate.~~ Colonies of invasive species such as perennial peppergrass (*Lepidium latifolium*) and common reed (*Phragmites australis*) shall be cleared and grubbed to remove the tubers and roots. All invasive wetland plant material shall be collected and properly disposed in a suitable upland location.

Page D.4-68, under Mitigation Measure B-3a, bullet item deleted —

- ~~**Off-road vehicular travel must be recorded in writing, including purpose for off-road vehicular travel, a map of the route taken, date, and a description of the sensitive resources avoided.**~~

Page D.4-71, Table D.4-11, footnote added —

* Note: Area estimates for wetland impacts to Segment 1 assume that the proposed route is followed through the Peyton Slough. If the Existing Pipeline ROW alternative is used from MP 3.5 to the Carquinez Strait, then 3.4 fewer acres of seasonal alkali marsh would be affected in Segment 1.

Page D.4-71, immediately following Table D.4-11 —

As discussed under Impact BB-2, botanical surveys of the Segment 1 project area conducted by URS were not appropriately timed with the blooming period of one special status plant species, fragrant fritillary, which has the potential to occur along this segment. Although the cited blooming period for this species is February through April, the optimum blooming period is in mid-March. However, the earliest botanical survey conducted by URS was in early April, which may not have been early enough to determine the presence or absence of this species within the project area. Construction and related activities causing direct impact to this species or its habitat and would be considered potentially significant, but mitigable to less than significant with implementation of Mitigation Measure BB-2a.

Page D.4-71, under D.4.3.6 Impacts by Segment, Segment 1 (MP 0–6.1) – Contra Costa County and Carquinez Strait, Vegetation and Wetlands —

Pipeline construction would result in temporary and long-term impacts to 7.3 acres of jurisdictional wetlands within and adjacent to pipeline construction areas (see Impact BB-5 in Section 4.3.3 and Appendix 1). If the proposed pipeline route segment is followed between MP 3.5 and the Carquinez Strait (crossing the Peyton Slough), 5.7 acres of wetland would be temporarily affected during construction and HDD, as proposed by SFPP. An additional 1.8 acres of wetland (7.5 acres total) would be temporarily impacted if an open trench across the Slough were used instead of HDD. If the Existing Pipeline ROW Alternative segment (also with HDD for crossing Peyton Slough) were used to avoid the Rhodia property, a total of 2.3 acres of wetlands would be temporarily affected. Mitigation Measure BB-5a would be required for both alternative routes, and both crossing types, and in all cases the impact would be less than significant.

Page D.4-79, under Impact B-4: Construction Impacts and Potential Accidents in Cordelia Marsh, Segment 4 (MP 24.5–30.7) – Fairfield/Suisun City, Vegetation and Wetlands —

~~Botanical surveys of the project area conducted by URS were not appropriately timed with the blooming period of one special status plant species, fragrant fritillary, which has the potential to occur along this segment. Although the cited blooming period for these species is February through April, the optimum bloom period is in mid-March. However, the earliest botanical survey conducted by URS was in early April, which was probably not early enough to determine the presence or absence of these species within the project area. Construction and related activities causing direct impact to these species or its habitat (Impact BB-2) would be considered potentially significant (Class II).~~ The loss of individuals or known habitats of rare, threatened, or endangered plant species would be considered a significant impact (Impact BB-2). Such impacts are possible where construction and related activities may remove Contra Costa goldfields at occurrences within the ROW. Construction activities resulting in the removal of a special status plant species would be considered potentially significant (Class II), but mitigable with the implementation of Mitigation Measure BB-2a.

Page D.4-80, under Impact B-4: Construction Impacts and Potential Accidents in Cordelia Marsh, Segment 5 (MP 30.7–65.1) – Solano and Yolo Counties Agricultural Area, Vegetation and Wetlands

~~Similar to Segment 1 and discussed in Impact BB-2, botanical surveys of the project area conducted by URS were not appropriately timed with the blooming period of two special status plant species, fragrant fritillary and adobe lily, which have the potential to occur along this segment. Although the cited blooming period for these species is February through April, the optimum bloom period is in mid-March. However, the earliest botanical survey conducted by URS was in early April, which was probably not early enough to determine the presence or absence of these species within the project area. Construction and related activities causing direct impact to these species or its habitat would be considered potentially significant (Class II), mitigable with Mitigation Measure BB-2a.~~

Page D.4-82, under D.4.3.8 Cumulative Impacts —

Cumulative impacts could also occur as a result of new pipeline accidents affecting areas previously impacted by past pipeline accidents (e.g., in the area of the Peyton Slough Remediation and Restoration Project). These impacts would be reduced with implementation of Mitigation Measure B-1a (Pipeline Spill Mitigation for Biological Resources), but as defined in Section D.4.3.4, the impact remains significant (Class I).

There are no known plans for construction of additional petroleum product pipelines in the proposed pipeline corridor. The Wickland connection portion of the project, however, would join a proposed pipeline and tank farm project that would ultimately connect the project to the Sacramento Airport (Sacramento International Airport Jet Fuel Pipeline and Tank Farm Project). The EIR for this project identified temporary impacts to wetlands and potential impacts to the Sacramento River and it~~'~~s associated vegetation communities. In addition, Caltrans is currently installing a new I-680 span of the Benicia-Martinez Bridge adjacent to the proposed pipeline project and within the Carquinez ~~Straight~~Strait. Potential project-related biological impacts from this project are primarily associated with the construction and placement of the bridge footing in Carquinez ~~Straight~~ Strait which may affect special status aquatic fauna, but could impact special status plants that occur in the vicinity such as Mason's lileaopsis. Similarly, the proposed Peyton Slough Remediation project is adjacent to and within the Proposed Project ROW, and would realign the existing slough resulting in temporary impacts to tidal wetlands and potential impacts to special status wetland plant species such as Mason's lileaopsis. Potentially significant

impacts to special status plant species and sensitive vegetation types may result from two sewer pipeline projects planned in a developed portion of the City of West Sacramento. These projects may result in spills that would affect sensitive resources. Spills from the sewer pipelines, however, would not result in severe long-term impacts to vegetation resources, which could occur as a result of spills from the proposed petroleum product pipeline operation. Therefore, although operation of the petroleum pipeline is likely to result in a significant and unmitigable impact, it would not be cumulative, relative to future planned projects.

Page D.4-83, under D.4.3.4 Cumulative Impacts, Wildlife and Aquatic Species –

As described above for vegetation and wetlands, the Wickland connection will join to a newly proposed pipeline that would temporary impact wetlands. Additional potential impacts from this project may include those to giant garter snake, special status raptors, and aquatic species that occur within the Sacramento River. Potential project-related wildlife impacts from the ~~Cal Trans~~ Caltrans Benicia-Martinez Bridge project would primarily be associated with the construction and placement of the bridge footing in Carquinez ~~Straight~~ Strait which may affect special status aquatic species that occur in the vicinity (e.g., steelhead, salmon, Delta smelt, Sacramento splittail, and green sturgeon). Similarly, the realignment of Peyton Slough would result in impact to tidal wetlands and the special status wildlife species that occur in these areas (e.g., salt marsh harvest mouse, and black rail).

Page D.4-84, under D.4.4.1 Environmental Impacts and Mitigation Measures for Existing Pipeline ROW Alternative, Vegetation and Wetlands –

Potential impacts to wetlands, including brackish marsh, salt marsh, seasonal alkali marsh, and riparian scrub, in the existing pipeline alternative would be similar to those in the proposed pipeline project. The existing pipeline project has the potential to affect approximately 6.4 additional miles of wetlands as compared to the proposed pipeline project. In addition, the Existing Pipeline ROW Alternative route has the potential to impact as much as 15 miles of vernal pools, which is much more than the 0.75 miles of vernal pools along the proposed pipeline. These wetland impacts would be similar in type to those for the proposed pipeline project. Impacts to wetlands due to construction and maintenance would be considered significant, but mitigable (Class II). Construction of the pipeline across Peyton Slough would result in 2.3 acres of wetland disturbance if accomplished by HDD or 7.5 acres if by trenching. If trenching is chosen as the construction method, it may also involve the removal or lowering of existing pipelines. Implementation of Mitigation Measures HS-1c, compliance with NPDES requirements for preparation of a Stormwater Pollution Prevention Plan and a Hazardous Materials Management Plan, and Mitigation Measures BB-3a, BB-5a, BB-5b, and B-5c (Sections D.4.3.3 and D.4.3.4), would reduce these impacts to wetlands to less than significant levels.

D.5 Cultural Resources

Page D.5-6, under D.5.1.2, Segment 3 (MP 17.6–24.5) – Cordelia —

Two historic features occur along Segment 3, and one potential historic district north of the segment:

- **Village of Cordellia (*sic*) Historic District, north of MP 17.6.** Multiple historic buildings in downtown Cordelia (Primary No. P-48-000446) in a district that is potentially eligible for the California Register of Historical Resources as significant between 1870-1934.

Page D.5-18, under D.5.3.6 Impacts by Segment, Cordelia Mitigation Segment —

Multiple historic buildings in downtown Cordelia (Primary No. P-48-000446) would be adjacent the Proposed Project if the Cordelia Mitigation Segment would be implemented. This means that the segment would have the potential to cause a significant adverse effect to historic buildings in a district that is potentially eligible for the California Register of Historical Resources. This could cause a significant impact to the non-renewable, built environment of the buildings in the district. Because the Cordelia Mitigation Segment is either immediately adjacent to or within disturbed road ROWs, it is unlikely that previously unknown ~~cultural~~ archaeological resources would be impacted during its construction. One known historic resource (Southern Pacific Railroad tunnel) exists near MP 19.9 of the proposed route. However, it is anticipated that the Cordelia Mitigation Segment would avoid this resource. Because the Cordelia Mitigation Segment would pass through the historic center of the town of Cordelia, there is a greater potential for discovery of unknown historic resources along this route, and impacts to historic resources in the built environment would be potentially significant. But the original route may encounter more prehistoric resources, because it passes through areas that have not been subject to significant excavation. Implementation of mitigation measures recommended for Impacts Cul-1 and Cul-2 would ensure that all potential impacts to archaeological resources are reduced to less than significant levels (Class II). ~~Because the likelihood of encountering historic or prehistoric resources along these routes is unknown, it is not possible to say which segment is preferred.~~The proposed route segment is preferred over the Cordelia Mitigation Segment because of the reduced likelihood of affecting historic resources.

D.6 Environmental Contamination and Hazardous Materials

Page D.6-1, Section D.6.1.2, Environmental Setting: Proposed Project, Segment 1 —

Segment 1 (MP 0–6.1) – Contra Costa County and Carquinez Strait

Segment 1 of the proposed pipeline runs from the SFPP Concord Station to the north shore of the Carquinez Strait. Most of this pipeline segment would be installed within existing utility and road ROW. This pipeline segment begins within the SFPP Concord Station and exits the station to the west through the tank farm. This segment would follow utility corridors through primarily undeveloped marshland, behind a residential neighborhood, pass through and adjacent to petroleum distribution and storage properties, and pass two landfill/waste transfer facilities. At Peyton Slough, the pipeline would cross the slough and pass into the Rhodia, Inc. facility (see additional detail below), approximately following the alignment of Peyton Slough along the eastern edge of the property. North of Rhodia's existing "Settling Pond" the pipeline would enter State-owned (CSLC) property and would gradually turn westward along the coast to meet the existing 14-inch pipeline and cross the strait. On the north shore of the Carquinez Strait the proposed pipeline would continue north approximately 100 feet from the exiting 14-inch pipeline and then turn northeast paralleling the shore through open land.

Rhodia Site

The Rhodia, Inc. property has been in continuous industrial use since the early 1900s, and was originally owned by the Mountain Copper Company. Mountain Copper Company operated a copper ore smelter until 1966. Waste by-products from the smelting operation, including cinders and slag, were disposed in piles on the property. Stauffer Chemical Company purchased the property from the Mountain Copper Company in 1968, and constructed a sulfuric acid regeneration and manufacturing facility, which has been in operation since 1970. Rhodia, Inc. currently owns and operates the sulfuric acid regeneration and manufacturing facility.

Copper and zinc have been identified as the primary chemicals of concern (COCs), and are used as indicators of metals contamination at the site. Based on the results of previous studies conducted at the site, the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB) Bay Protection Toxic Cleanup Program has identified the Slough as one of the "toxic hot spots" within the San Francisco Bay Area. Subsequently, the RWQCB has requested under Section 13267 of the California Water Code that Rhodia develop a remedial action plan (RAP) that addresses the COCs within the Slough. Specific areas of contamination are as follows:

- **Slough Bottoms**. Concentrations of copper and zinc in excess of the Effects Range Median concentrations (ERMs) set by the National Oceanic Atmospheric Administration (NOAA), and which represent the concentration at which probable adverse effects occur to marine benthic organisms, were encountered in sediments collected from the bottom of the Slough at depths of up to 8 feet below the sediment surface. Copper and zinc concentrations ranged from nondetect to 452,000 mg/kg from the sediment collected from the Slough bottom. Copper and zinc concentrations in excess of the ERMs were detected in samples collected from locations between the Carquinez Strait to Waterfront Road. The total linear extent of COCs is approximately 5,550 feet.
- **Slough Embankments.** Analytical results showed that six of 20 surface embankment samples contained copper and/or zinc in excess of the ERMs. At two of five locations tested, zinc exceeded the ERM at both depths of 2 feet and 3 feet intervals from the embankment surface.

In general, Slough embankment samples that exceeded copper and/or zinc ERMs were located within a close proximity to dredge spoil piles located immediately adjacent to the Slough. The source of the copper and zinc in the Slough embankments appears to be from erosion of the adjacent side-cast dredge spoil piles, which contain copper and zinc in excess of the ERMs.

- **Side-Cast Dredge Spoil Piles.** Soil samples from the unvegetated side-cast dredge spoil piles on the Slough embankments contain copper and zinc at concentrations in excess of the ERMs. The pH measurements taken during the Pre-Dredging Investigation indicate that the piles are also acidic. The concentrations of copper and zinc correlate well with areas observed to support little or no vegetation. Therefore, it is assumed that the lateral extent of these areas was limited to mounded soil lacking vegetation. The vertical extent of contaminants in the spoil piles is unknown. The areas have been surveyed by GPS and/or mapped by the lack of vegetation. The erosion of the dredge spoil piles is evident in both directions from the linear piles, both into the Slough and onto the adjacent seasonal wetlands. In addition, a pile of excavated material containing cinders and slag exists between the polishing pond adjacent to the tide gate and a tributary to the north Slough. Areas containing copper and zinc in excess of the ERMs (in unvegetated spoils piles) are considered potential sources and are identified as AOCs.

As a result of the identified contamination, Rhodia, Inc. proposes to re-align a segment of the existing Slough in the vicinity of the property. The re-aligned portion of Peyton Slough is located between Waterfront Road and the Carquinez Strait. The project will consist of two phases: (1) excavating and dredging a new alignment that will run parallel to and east of the existing Peyton Slough, breaching the levee that separates the northern and southern sections of the site, and then rerouting the tidal exchange between the Carquinez Strait and McNabney Marsh via the new alignment, and (2) dewatering, filling, then capping the existing Peyton Slough. Capping is the placement of an engineered barrier to isolate deeper sediments containing COCs from aquatic and other habitat. A layer of soil will be placed above the cap within which natural habitat may be re-established.

Page D.6-8, Section D.6.3.3, Impacts of Pipeline Construction, under Impact EC-1 —

Subsurface migration of mobile contaminants within groundwater or along the pipeline route itself following permeable backfill materials may provide a conduit to the project area. Shallow groundwater will likely be encountered at bored water crossings and near waterbodies such as straits, rivers, unlined canals, drainage ditches, and ponds. In areas where the water table is below the planned excavation depth of the proposed and alternative routes, contaminated groundwater is not expected to impact construction.

Page D.6-8, under Mitigation Measures for Impact EC-1 —

Implementation of the following three mitigation measures would provide an assessment of actual or potential site contamination, resulting in the development of appropriate safeguards and methods to reduce potential risk prior to construction. The mitigation measures ~~presented below~~ for known sites must be accomplished prior to construction to allow development of appropriate worker protection and waste management plans that discuss proper handling, treatment, and storage of hazardous waste from the project. The mitigation measures would require work to temporarily stop if unknown contamination is discovered during construction.

Page D.6-8, Mitigation Measure EC-1a, revision to first paragraph (second paragraph remains unchanged) —

EC-1a Medium Potential Impact Sites. SFPP shall thoroughly review current agency (e.g., Department of Toxic Substances Control [DTSC], Regional Water Quality Control Board, the appropriate County's Environmental Health Division or Fire Department) records for "medium" potential sites (as defined in Tables D.6-1 through D.6-7) followed by site-specific visual inspection of the pipeline route by a qualified environmental consultant approved by the CSLC. In addition, records of the U.S. Army Corps of Engineers shall be investigated for information on the Benicia Arsenal. Record review shall identify data confirming that no off-site contamination extends to the pipeline route, or that adequate remediation of the pipeline route has occurred, or agency certified closure of the site. Visual inspection shall be completed for the unpaved portions of the route and shall verify no evidence of off-site discharge, surface stains or unauthorized dumping.

Page D.6-9, Mitigation Measure EC-1b, revision to second paragraph and additional third paragraph —

If the records review does not eliminate the possibility that contamination could extend off-site, an investigation shall be performed. The investigation shall include collecting samples for laboratory analysis and quantification of contaminant levels within the proposed excavation and surface disturbance areas. Subsurface investigation for high potential sites shall determine appropriate worker protection and hazardous material handling and disposal procedures appropriate for the subject site. Areas with contaminated soil and groundwater determined to be hazardous waste shall be removed by personnel who have been trained through the OSHA recommended 40-hour safety program (29CFR1910.120) with an approved plan for groundwater extractions, soil excavation, control of contaminant releases to the air, and off-site transport or on-site treatment. Planning completed under this measure shall consider the potential for existing contamination to migrate along the pipeline route; if this is determined to be possible, impermeable backfill (i.e., cement slurry) shall be used around the pipe. Health and safety plans, prepared by a qualified and approved industrial hygienist, shall be developed to protect the general public and all workers in the construction area. Results shall be reviewed and approved by the appropriate County's Environmental Health Division or DTSC prior to construction. Documentation of all site research and a copy of the DTSC or appropriate County's Environmental Health Division approval letter must be provided to the CSLC 60 days prior to start of construction.

If the approved route includes construction through any portion of the Peyton Slough Restoration and Remediation Project, SFPP shall coordinate with Rhodia Inc. and all involved agencies (RWQCB, CSLC, USACE) to define the location and dimensions of specific project components (e.g., bore pits, access roads, and work areas) in order to minimize impact to ongoing or completed remediation work and to minimize impacts to resources in the area (e.g., wetlands and sensitive species habitat).

Page D.6-9, Mitigation Measure EC-1c —

EC-1c Unknown Soil or Groundwater Contamination. During all project excavation activities, the contractor shall inspect the exposed soil for visual evidence of contamination. If visual contamination indicators are observed during excavation or grading activities, all work shall stop and an investigation shall be designed and performed to verify the presence and extent of contamination at the site. A qualified and approved environmental consultant shall

perform the review and investigation. . ~~Results shall be reviewed and approved by the appropriate County's Environmental Health Division or DTSC prior to construction.~~ The investigation shall include collecting samples for laboratory analysis and quantification of contaminant levels within the proposed excavation and surface disturbance areas. Subsurface investigation shall determine appropriate worker protection and hazardous material handling and disposal procedures appropriate for the subject site. Areas with contaminated soil and groundwater determined to be hazardous waste shall be removed by personnel who have been trained through the OSHA recommended 40-hour safety program (29CFR1910.120) with an approved plan for groundwater extractions, soil excavation, control of contaminant releases to the air, and off-site transport or on-site treatment. A health and safety plan, prepared by a qualified and approved industrial hygienist, shall be used to protect the general public and all workers in the construction area. A report documenting investigation results and actions taken shall be submitted to the appropriate County's Environmental Health Division or DTSC for review and approval within 60 days of completion of pipeline construction at any location where contamination is identified.

Page D.6-13, under D.6.3.6 Impacts by Segment, Segment 1 (MP 0–6.1) – Contra Costa County and Carquinez Strait —

While not included in the Applicant's database, the Rhodia Inc./Peyton Slough site are considered to be sites with high potential to impact the project due to the existing RWQCB cleanup order (see Table D.6-1). A more detailed description of the Rhodia site is presented following Table D.6-1. ~~Two potentially contaminated sites not listed in the Applicant's database are also present along the alignment, Peyton Slough and the Rhodia Inc. facility (URS, 2002b). Both~~ This sites has ~~have had~~ known historic heavy metal contamination of the soil ~~and should be treated as sites with a high potential to impact the project~~. The presence of ~~these~~ this contaminated site~~s~~ results in a potential for contaminated soil and/or groundwater to be encountered during construction, resulting in a potentially significant (Class II) impact (Impact EC-1), mitigable to less than significant levels through implementation of Mitigation Measures EC-1b and EC-1c. If construction of the Proposed Project occurs after remediation of these sites, the record review required by Mitigation Measure EC-1b will result in these sites being reclassified as "low" potential.

Page D.6-14, Table D.6-1, row added to HIGH POTENTIAL SITES following Martinez City Rubbish —

3.5-5	Rhodia Inc.	100 Mococo Rd, Martinez	RWQCB, Toxic Hot Spots	This SF Bay Area Toxic Hot Spot is subject to RWQCB Site Cleanup Requirements Order No. 0-1-097. The Peyton Slough Remediation and Restoration Project is being planned by an interagency task force.

Page D.6-21, under D.6.3.8 Cumulative Impacts —

Potential cumulative impacts related to environmental contamination include one cumulative project in Contra Costa County, two projects in Solano County and three in Yolo County. Refinery upgrades at the Clean Fuels Project (Site #1), Phase Two in Concord, Contra Costa County, may encounter contaminated soil at the existing petroleum facility. Transport and treatment of these materials at off-site facilities that are also needed by the Proposed Project may result in a cumulative impact. In addition, Table E-1 lists Site #11a in Segment 1 (Contra Costa County): the Peyton Slough Remediation and Restoration Project. If pipeline construction passes through this project area, whether before or after implementation of the project, there is the potential for cumulative impacts from contaminated soils or pipeline construction through capped areas that require reconstruction of containment features at closed hazardous waste sites. As for the proposed project, implementation of Mitigation Measures EC-1b and EC-1c would ensure that impacts are less than significant.

D.7 Geology, Soils, and Paleontology

Page D.7-9, under Segment 2 (MP 6.1–17.6) – Benicia and I-680 Frontage, subhead Geology —

Segment 2 overlies mapped areas of recent landslide deposits from MP 10.1 to 10.5, MP 14.6 to 14.9, and MP 15.1 to 15.2 (Bortugno, 1987). The landslide deposits mapped between MP 10.1 and 10.5 are within the Alquist-Priolo Zone[2] (A-P Zone) for the Green Valley Fault and obscure the surface traces of the fault, as mapped by the CGS (1977). URS recently completed an investigation of these landslides (URS, May 2003). URS drilled three borings along the proposed alignment within the landslide areas as presented in California Division of Mines and Geology Open File Reports 86-17 (Bortugno), 88-22 (Manson, 1988), and Haydon (1995) ~~within the mapped slide area~~, finding deeply weathered Cretaceous shale, weathered Domengine (Lower Tertiary) sandstone, and material so thoroughly sheared and weathered that it is most likely fault gouge of the Green Valley Fault. Just north of the mapped slide area another boring encountered hard rocks of the Sonoma Volcanics. None of the borings appeared to contain landslide debris, and based on URS geologic mapping and borings (with adequate sample retrieval), URS Certified Engineering Geologists are convinced that no deeper slide planes are present. It is likely that the mapped landslide is shallow and its slide plane lies above the elevation of the borings, in which case the proposed pipeline would not be impacted.

URS also investigated the mapped landslides north of the Green Valley Fault zone between MP 14.6 and 15.2 (URS, May 2003). Their findings indicate that the mapped landslide at MP 14.6 to 14.9 is shallow and its slide plane lies above the elevation of the borings. Based on URS geologic mapping and borings (with adequate sample retrieval), URS Certified Engineering Geologists are convinced that no deeper slide planes are present, in which case the proposed pipeline will not be impacted. At MP 15.1, the URS boring encountered landslide debris to approximately ~~8~~ 10 feet below the surface, and based on URS geologic mapping and borings (with adequate sample retrieval), URS Certified Engineering Geologists are convinced that no deeper slide planes are present, though a distinct slide plane was not evident and the slide may be thicker. URS's recommendation to keep the pipeline deeper than 14 feet below this slide (the HDD crossing is planned for 18 feet deep) seems sufficient to avoid damage to the pipeline from future movement by the landslide.

Page D.7-11, under Segment 3 (MP 17.6–24.5) – Cordelia —

Faults. The alignment along Segment 3 crosses the Cordelia Fault across level agricultural fields along the transmission line ROW at MP 18.2. The Cordelia Fault is classified as an active fault with an associated A-P Earthquake Hazard Zone between MP 18.0 and MP 18.2 of the proposed alignment. The Green Valley Fault is located approximately 0.6 miles west of the western end of this segment, extending along the margin of the hills west of I-680. A recent URS study estimates the possible maximum earthquake magnitudes that could be generated by the Cordelia Fault range from 6.0 to 6.5. The estimated strike-slip offset on the Cordelia Fault is 0.75 meters based on maximum earthquake magnitude, but could be as much as 0.84 to 0.93 meters ~~No estimate of amount of fault offset was given~~ (Table B-5 in URS, April 2003).

[2] Alquist-Priolo Earthquake Hazard zones are defined in Section C.7.2.2.

Page D.7-18, Mitigation Measure for Impact G-2: Loss of Paleontological Resources —

G-2a Paleontological Resource Procedures. Paleontological resources may exist at the locations where the proposed alignment crosses moderate to highly sensitive units as follows:

Paleontological monitoring of excavation within Mileposts ~~1.0 to 5.0,~~ 11.0 to 15.5, 17.6 to 18.3, 26.1 to 30.8, 35.3 to 36.0, and 37.5 to 40.1 shall be completed by a qualified paleontologist. The paleontologist shall provide education and training of construction workers about potential paleontological resources that may be discovered and, subject to prior approval by the CSLC on a case-by-case basis, he/she will have the ability to stop construction if potentially significant resources are identified and threatened by the project. All specimens collected from public land shall be deposited at a curating institute such as the University of California at Berkeley Museum of Paleontology.

Page D.7-19, under Mitigation Measures for Impact G-3: Steep Slopes and Landslide Hazards —

G-3a Geotechnical Investigations at Landslide Crossings. Data generated from geotechnical investigations performed at all landslide crossings (MP 14.6 to 14.9~~5~~, 15.1 to 15.3, and 19.81 to 19.83) shall be used to develop criteria to ensure that appropriate slope stabilization measures are included in the project design. These measures may include soil improvements, buttressing of the slopes, compaction of trench backfill, or deepening trenches to place the pipeline beneath potential slide activity. The results and recommendations of the geotechnical investigations shall be presented in a report to be delivered to the contractor prior to the final design of the pipeline. The recommendations of the geotechnical report shall be addressed and incorporated into the pipeline final design, and submitted to the CSLC and California State Fire Marshal (CSFM) for review and approval at ~~lease~~ least 60-days in advance of construction.

G-3b Valves at Landslide Crossings. Motor operated valves (MOVs) and/or check valves shall be placed at either side of any recognized landslide hazard zone if identified by a geotechnical investigation or by the CSLC as being necessary to prevent excess spillage in the event of a landslide-caused rupture. ~~The location of the MOV at MP 15.27 may be combined with the recommended relocation of Manual Valve #4 (see Mitigation Measure G-7a).~~ Locations of all MOVs and/or check valves shall be presented in the final pipeline design, coordinated with the location of such valves at active fault crossings, and subject to approval of the CSLC in conjunction with the CSFM.

Page D.7-19, Impact G-4 —

Impact G-4: Highway and Railroad Under-Crossings

Due to surcharge loading attributable to trains, there could be a failure of an excavation in areas where the proposed pipeline crosses beneath active railroad ROW, which could seriously impact operation of the railroad. (Potentially Significant, Class II)

Impact Discussion

The Proposed Project would require approval for highway and railroad crossings from the applicable jurisdiction or property owners, identified in Section D.12, Transportation and Traffic. The minimum depth of cover at highways may be specified by the permitting agencies. Where the proposed pipeline crosses beneath active railroad right of way (Segment 3, MP 21.7 and 22.0; Segment 5, MP 32.6; and Segment 6, MP 68.5, 68.6, and 68.9), trench and pipeline design should take into account the addi-

tional surcharge of passing trains. These excavations can be completed if sufficient safety precautions are implemented. However, failure of an excavation in these areas, due to surcharge loading attributable to trains, could seriously impact operation of the railroad. This represents a potentially significant, but mitigable (Class II) impact.

Page D.7-20, Mitigation Measure for Impact G-4: Highway and Railroad Under-Crossings —

Mitigation Measure for Impact G-4: Highway and Railroad Under-Crossings

G-4a Construction Below Active Highways and Railroads. The minimum depth of cover underneath the highways and railroads shall be as per the applicable permitting agency requirements, typically 7 feet for highway crossings and 10 feet for railroad crossings. In areas where the pipeline excavation ~~crosses beneath~~ is within 10 feet of the centerline of an active railroad, a geotechnical investigation shall be performed to develop criteria for stabilizing the excavation. These criteria shall account for periodic surcharge loading due to railroad operations; completion of the investigation shall be documented and submitted to the CSLC for review ~~and approval at lease 60 days in advance of~~ prior to construction. All railroad crossings shall be permitted with the appropriate facility owner. Facility owner notification prior to construction will be as specificed on the permit and proof of such notification shall be made available ~~The railroad shall be notified of the proposed excavation; a copy of the notification shall be provided~~ to the CSLC.

Page D.7-21, under Impact G-5: Fault Rupture —

With implementation of Mitigation Measures G-5a and G-5b, the risk of pipeline rupture at the three active fault crossings would be reduced. However, the Concord and Green Valley Faults have the potential for lateral movement of up to ~~six~~ 9.5 feet, and no pipeline design measures would prevent rupture in that situation. Therefore, the risk of fault rupture is still considered to be significant (Class I).

Page D.7-21, under Mitigation Measures for Impact G-5: Fault Rupture —

G-5a General Fault Crossing Design Parameters. In order to develop site specific measures for final pipeline design for individual fault crossings, the Applicant shall complete final ~~geotechnical studies~~ assessment of fault data at the Concord, Green Valley, and Cordelia Fault crossings to ~~accurately define the fault plane location, orientation and direction of anticipated offset and to refine fault crossing design parameters prior to construction of the pipeline~~determine the pipeline's capability to withstand worst-case fault displacements. In order to retain the pipeline's ductility, the pipeline shall be aligned to cross the fault with as close to a 90º angle as possible to avoid shortening or large compressive strains during fault movement. Other appropriate design and operational procedures to be considered for incorporation during final pipeline design include, but are not limited to, engineered backfill, thicker wall pipe, MOVs and/or check valves on either side of the fault crossings and/or use of seismic switches/alarms to minimize the potential impact of a sizeable seismic event. Final pipeline design with associated design mitigation measures ~~The geotechnical reports~~ shall be submitted to the CSLC and the California State Fire Marshal (CSFM) for approval and shall be made available to ~~and~~ the affected counties' public works departments for review~~, and the recommendations shall be incorporated into the final pipeline design~~.

Page D.7-22, under Mitigation Measures for Impact G-5: Fault Rupture —

Concord Fault. Pipeline construction for the Concord Fault crossing, which will ~~shall~~ be accomplished by HDD, shall use ~~utilizing~~ a minimum 0.5 inch pipe wall thickness and shall include ~~a~~

~~system for monitoring and controlled shutdown of the pipeline. This shall be accomplished through installation of~~ an MOV at MP 0.3 or at the Concord Station and an additional MOV at approximately MP 0.5 ~~(or such other location determined by the CSLC during review and approval of final pipeline design plans) to limit the volume of product released should movement of the Concord Fault cause rupture of the pipeline. Pipeline design shall also follow the general parameters described above as appropriate~~.

Green Valley Fault. ~~Pipeline construction~~ Preliminary design for the Green Valley Fault crossings assumes there is the potential for pipeline rupture. This pipeline crossing shall utilize a ~~minimum~~ 0.5 inch pipe wall thickness. An MOV at MP 9.77, a check valve at MP 10.28, and a check valve at MP 10.95 ~~MOVs~~ shall be installed ~~on both sides of the fault crossing~~ to limit the volume of product released should rupture occur~~; these valves shall be installed at or near MP 10.0 and 10.52 or such other location determined by the CSLC during review and approval of final pipeline design plans. Pipeline design shall also follow the general parameters described above as appropriate~~. Final design of the Green Valley Fault crossing may warrant additional valves and different locations for the valves.

Cordelia Fault. ~~MOVs shall be installed on both sides of the fault crossing to limit the volume of product released should rupture occur; if determined to be necessary by the CSLC during review and approval of final pipeline design plans.~~ The design analysis for the Cordelia Fault crossing indicates that there is an extremely low potential for pipeline rupture. Pipeline design shall ~~also~~ follow the general parameters described above as appropriate. The crossing shall be constructed utilizing 0.5 inch pipe wall thickness.

Page D.7-23, under Mitigation Measures for Impact G-5: Fault Rupture —

G-5b **Pipeline Operations Plan.** At least 60-days prior to placing the proposed pipeline into service, SFPP shall submit to the CSLC and California State Fire Marshal (CSFM) for final review and approval, a revised Pipeline Operations and Maintenance Plan (POMP). The POMP shall address internal and external maintenance inspections of the completed facility, including details of the integrity testing methods to be applied, corrosion monitoring and testing of the cathodic protection system, leak monitoring, emergency response procedures and protocols. The POMP shall also include and address all applicable operational mitigation measures contained in this document including, but not limited to, geohazard analysis for monitoring fault crossings, procedures to be followed to assess the pipeline for continued safe operation, which may include hydrotesting, gauge pig runs, smart pigging, and other appropriate assessment methods and analyses, ~~for pigging the pipeline~~ in the vicinity of fault crossings following a seismic event, liquefaction areas, landslide zones, and settlement. Within three months following promulgation of any new Federal or State regulation relating to issues and requirements contained in the approved POMP, SFPP shall update the POMP and submit a revised copy to the CSLC and CSFM for review and approval.

SFPP shall incorporate the following practice into the POMP for review and approval by the CSLC at least 60-days in advance of construction:

- Immediately following an earthquake within the parameters shown in the table below, that causes pipeline rupture, or that causes the pipeline to be shut-down, qualified SFPP operations personnel shall inspect all parts of the pipeline alignment that fall within the specified distance of the earthquake epicenter for evidence of ground deformation (e.g., cracks or displacements). If surface fault rupture is reported or observed, the pipeline alignment within at least 1,000 feet of the rupture shall be inspected. If any part of the pipeline has been subjected to

ground displacement including settlement, liquefaction, lateral spreading, landsliding or fault rupture, or high levels of ground shaking (greater than 0.6g), those areas of the pipeline and 1,000 feet beyond shall be inspected. SFPP shall submit reports of its findings to the CSLC and CSFM. In the event of pipeline shut-down or rupture due to a seismic event, the pipeline shall not be re-operated without prior review and approval by the CSLC and CSFM.

Earthquake Magnitude (Richter scale)	Epicentral Distance (miles)
6	5
6.5	10
7	15
7.5	20

SFPP shall prepare and submit for review and approval by CSLC and CSFM, a detailed post earthquake inspection and monitoring plans and procedures to assess the integrity of the pipeline meeting the seismic design criteria used in fault crossings and other seismic hazards, for continued safe operation of the pipeline.

Page D.7-24, under Mitigation Measure for Impact G-6: Strong Ground Shaking —

G-6a Excavation Safety and Trench Design. In order to ensure the safety of excavations along the entire pipeline, OSHA-approved shoring shall be used at all times when shoring is required. Within the SFPP Concord Station, potential impacts of groundshaking shall be assessed to determine the adequacy of OSHA-approved shoring. Any necessary enhancements to OSHA-approved shoring within the Concord Station shall be ~~, a geotechnical investigation of the potential ground motions shall occur. The results and recommendations of the investigation shall be provided to the excavation design team and~~ incorporated into the final trench design~~, subject to CSLC review and approval at least 60 days in advance of construction~~.

Page D.7-25, under Mitigation Measure for Impact G-7: Liquefaction Potential —

G-7a Reduce Liquefaction Hazard. Final geotechnical ~~investigations~~ analysis shall be conducted in ~~the~~ areas underlain of medium and high liquefaction potential. ~~by Younger Bay Mud and by recent alluvium at all creek and river crossings, including soils in the Yolo Bypass and near the Deep Water Ship Channel. EIR Table D.7-4 lists the mileposts at each location of potential liquefaction (boundaries between significantly different soil types).~~ The results and recommendations of the geotechnical ~~investigations~~ analysis shall be incorporated into the final pipeline design. If moderate to high liquefaction potential is confirmed by geotechnical analyses, then design measures shall be implemented at the corresponding location. Appropriate design is dependent on site-specific conditions and could include the following specific options:

Page D.7-26, under Mitigation Measure for Impact G-8: Seiches —

G-8a Protection from Seiche Inundation. ~~Final geological investigations shall be conducted in the vicinity of the Carquinez Strait crossing points~~ An analysis to evaluate wave run-up and erosion potential shall be conducted to identify ~~and map~~ local conditions that may be impacted by a series of seiche waves on the order of 3 to 5 feet high. The report shall provide specific recommendations about where to place erosion protection for the buried pipeline. Possible forms of protection from the erosive action of seiche waves could include armoring of slopes facing the water by either paving or placement of rip-rap, or where the topography is very flat, placement of an armored berm over or across the pipeline.

D.8 Hydrology and Water Quality

Page D.8-5, under D.8.1.2, Segment 1 (MP 0–6.1) – Contra Costa County and Carquinez Strait, subhead Groundwater —

Groundwater in this area is known to be contaminated by pesticides, and is subject to saline contamination from return irrigation flow. Dissolved solids are moderately high and range from 500 to 1,500 milligrams per liter (USGS, 1995). The area around Peyton Slough is under a site cleanup order from the RWQCB for sediment contamination (RWQCB, 2001). The site has been identified as a toxic hot spot as a result of copper smelting at the site dating back to the early 1900s. Pollutants of concern include silver, cadmium, copper, selenium, zinc, pcbs, chlordane, ppDDE and pyrene. A multi-agency project (the Peyton Slough Remediation and Restoration Project) is underway to develop a remediation and restoration plan that will include relocation of Peyton Slough itself.

Page D.8-11, under D.8.2.3 Regional and Local —

~~Ministerial~~ Encroachment Permits

Local regulatory agencies such as the Contra Costa Flood Control District, Solano County Water Agency, Maine Prairie Water District, Reclamation District 2068 and the Sacramento Yolo Port District require encroachment permits for any Proposed Project that would entail water crossings. Acquisition of land rights and a license agreement from the Contra Costa Flood Control District would be required. This District would also require a discretionary Flood Control Permit and a Drainage Permit.

Page D.8-12, under Mitigation Measures for Impact HS-1: Discharge of Fine Sediments into Streamflow During Construction —

HS-1a Construction Plans to Define Water Crossings. Construction work in stream channels shall follow construction plans and a schedule approved by the CSLC, applicable RWQCB, and California Department of Fish and Game submitted at least 60 days prior to the start of construction. Construction plans shall show, as applicable, stream plan view, stream cross section, location and burial depth of the pipeline, trench dimensions, location of access roads and spoil piles, stream crossing techniques, flood control structure and levee protection, culvert sizes, diversion structures, sediment control structures, equipment to be used, staging areas, and any other information relevant to the crossing as deemed appropriate by the reviewing agency. Plans showing typical rather than site-specific crossing techniques may be used for routine crossings of small drainageways at the discretion of the reviewing agency.

No material that does not have a specific purpose related to pipeline construction within the stream shall be placed in the streambed. No material shall be left in the streambed after construction except as allowed by the approved plans. The channel cross section shall not be permanently altered except as allowed by the approved plans.

Streambed construction shall be accomplished as quickly as possible as approved by the responsible agency and only during the period of stream low flow (generally mid-June to end of October). All work in the Suisun Marsh shall adhere to the October through April closure specified by the California Department of Fish and Game. The period of construction may be subject to further constraint in other environmental issue areas.

Page D.8-14, under Mitigation Measures for Impact HS-1: Discharge of Fine Sediments into Streamflow During Construction —

HS-1d Pacheco Slough Crossing. If any flowing water is present or expected to be present during construction in Pacheco Slough, Pacheco Slough shall be crossed using directional drilling methods (HDD and/or boring), as approved by the CSLC and the appropriate jurisdictional agencies.

Page D.8-15, Mitigation Measure HS-3a: Response to Unanticipated Release of Drilling Fluids —

- **Obtain site-specific geotechnical data at all water crossings where HDD is to be used ~~to determine the appropriate depth below bed of waterway~~. A minimum of 35-feet depth of cover from the lowest point/scour depth in the river bottom shall be used for the pipeline crossings installed by HDD unless the site-specific geotechnical investigation report recommends a more shallow depth.**

[. . .]

- **No nighttime drilling shall be allowed unless ~~absolutely~~ required to maintain the integrity of the borehole or prevent the drill string from getting stuck.**

[. . .]

- **If nighttime drilling is required, ~~U~~use non-toxic fluorescent dye in the drilling mud to allow easier identification of frac-outs.**

Page D.8-18, under Mitigation Measures for Impact HS-4: Risk of Surface Water Contamination from Pipeline Rupture Caused by Hydraulic Action —

HS-4a Adequate Pipeline Burial and Protection. The minimum burial depth of the pipeline at stream crossings shall be equal to or greater than the 100-year depth of scour plus four feet, the 100-year depth of scour times 1.3 (whichever depth is greater), or such other minimum depth required by the CSFM or CSLC for waterway crossings within its jurisdiction based on the results of final geotechnical analysis. A registered civil engineer shall demonstrate the pipeline burial depth at each crossing to be at or below this depth. All pipeline burial plans, with backup engineering analysis and calculations, shall be reviewed and approved by the CSLC, in conjunction with the CSFM, and local flood control districts, 60 days prior to construction.

Page D.8-20, under Mitigation Measure for Impact HS-5: Accidental Contamination of Surface Water with Pipeline Product —

HS-5a Spill Response Plan to Protect Waterways. The Supplemental Spill Response Plan defined in Mitigation Measure S-2a (Section D.2) shall include specific measures for containment and clean-up of product spills that could possibly reach surface water either directly or through any conduit including overland and subsurface flow. This plan shall be submitted to the CSLC for review and approval 60 days prior to pipeline construction. The plan shall identify all local, State and federal agencies that may have an interest in specific spill clean-up activities, and identify methods for notification and coordination with these agencies in the event of a spill.

Page D.8-24, under Mitigation Measures for Impact GW-4: Contamination of groundwater —

GW-4a Install Thicker-Wall Pipeline or Weight Coating in Strategic Areas. Where the pipeline is placed within a shallow aquifer with potential to submerge the pipeline, and consolidated backfill cannot adequately restrain the pipe ~~or in an area likely to be disturbed by future construction activity near municipal wells~~, SFPP shall install a thicker walled pipe, river weights, or heavy coating (such as concrete) to the pipeline to mitigate buoyancy ~~in the event the pipeline temporarily does not contain fuel and to provide additional protection from third-party damages~~. These areas shall be identified by SFPP in a report submitted to the CSLC at least 60 days before construction showing all areas along the approved route with groundwater levels of less than 20 feet. In the event the pipeline temporarily does not contain fuel, SFPP shall monitor the route for potential seismic-induced liquefaction if a seismic event occurs.

GW-4b Water Well Protection. During final pipeline design, SFPP shall identify and report to CSLC any existing public water supply well within 200 feet of the proposed pipeline centerline. Depending on the geology of any particular location, a greater separation or special pipeline design features (e.g., use of thicker-walled pipe to further protect against third-party damage) may be required. For any well within 200 of the proposed pipeline centerline, SFPP shall coordinate with the well owner and include protective measures (e.g. thicker-walled pipe) as necessary and agreed upon by the well owner and CSLC. In addition~~During final pipeline design, SFPP shall ensure that the pipeline and all construction activity are located at least 200 feet from any existing water well. Depending on the geology of any particular location, a greater separation or special pipeline design features (e.g., use of thicker-walled pipe to further protect against third-party damage) may be required. In addition~~, in accordance with California Government Code Sections 51017.1 and 51017.2, if the pipeline is located within 1,000 feet of a public drinking water well, SFPP shall prepare a Pipeline Wellhead Protection Plan that describes SFPP's efforts to ensure pipeline integrity and response measures. A report on water wells, providing the information required in this measure shall be submitted to the State Fire Marshal and the CSLC for review and approval 60 days prior to the start of construction.

D.9 Land Use, Public Recreation, and Special Interest Areas

Page D.9-3, Table D.9-3 —

Table D.9-3. Segment 1 Land Use Types by Milepost

Milepost	Street	Jurisdiction	Land Use	Proposed Valves, Sensitive Receptors, and Other Concerns
0-.3	Concord Substation	Contra Costa County	North - Light Industrial South - Heavy Industrial	Valve (motor operated valve [MOV]; MP 0.0) Camping/squatters (600 ft north of proposed route); Concord Fault crossing
0.3-0.5	Walnut and Grayson Creeks crossing	Contra Costa County	Pipeline Horizontal Directional Drill (HDD) under creek area	None
0.5-0.6	Transmission line corridor	Contra Costa County	East – Creek Area West – Light Industrial	None
0.6-2.0	Transmission line corridor	Contra Costa County	North/East – Light Industrial/Open South/West– Light Industrial/Open (Central Contra Costa Sanitary District; Contra Costa Flood Control District)	RV park (1,000 ft west of ROW)
2.0-2.4	Central Ave to Private ROW	Contra Costa County	East – Light Industrial West – Residential	Floyd's Daycare Center (100 ft west of proposed pipeline route)
2.4-2.5	Arthur Rd	Contra Costa County	North - Light Industrial South – Light/Heavy Industrial	None
2.5-3.3	Waterbird Way	Contra Costa County	East – Landfill West – Open/Recreation (East Bay Regional Park District)	Shell Marsh (land bank)
3.3-3.4	Crossing UPRR	Contra Costa County	Pipeline bore under railroad track	None
3.4-3.6	Service road	Contra Costa County to City of Martinez	North – Industrial (Shore Terminal) South – Waterfront Rd/UPRR	None
3.6-5.0	Service road	City of Martinez	East – Open (Zinc Hill) West – Industrial (including Rhodia Plant/Retention Basins)	Contamination issues with "mining wastes" (associated with the Peyton Slough, Zinc Hill, and the Rhodia Plant), HDD across Peyton Slough (MP 4.0) Valve (MOV; MP 4.8)
5.0-6.1	Crossing Carquinez Strait	City of Martinez / Contra Costa County to City of Benicia / Solano County	Cross Carquinez Strait using existing 14" pipeline	New Benicia-Martinez Bridge construction (contamination issues from the Rhodia Plant—see above)

Page D.9-4, under D.9.1.2, Segment 1, Phase 1 Carquinez Strait Crossing (footnote revised) —

City of Martinez (Contra Costa County). As shown in Table D.9-3, 2.3 miles of the proposed route would be in the City of Martinez. The proposed route would follow a service road onto the Shore Terminal property as it would make its way north towards the Carquinez Strait. The 20-inch pipeline would travel adjacent to Zinc Hill (MP 4.1) and then head westerly across existing marshland for approximately 800 feet before reaching an existing access road on Rhodia, Inc. (Rhodia) property. Through the existing marshland, the pipeline would cross both the existing and future alignments of the Peyton Slough.[3] This area around the Rhodia Plant, Zinc Hill, and the Peyton Slough has substantial soil contamination associated with mining wastes, including zinc, copper, cadmium, iron, nickel, arsenic, barium, mercury, and low pH.

Page D.9-5, Table D.9-4 —

Table D.9-4. Segment 2 Land Use Types by Milepost

Milepost	Street	Jurisdiction	Land Use	Proposed Valves, Sensitive Receptors, and Other Concerns
6.1-6.8	Parking lot	City of Benicia	East – Industrial/Car lot West – Road/Industrial	Valve (MOV; MP 6.3)
6.8-6.9	Crossing Sulfur Springs Creek	City of Benicia	Pipeline bore under creek	None
6.9-7.2	Parking lot	City of Benicia	East – Industrial/Car lot West – Industrial	None
7.2	Crossing UPRR	City of Benicia	Pipeline bore under railroad track	None
7.2-8.8	Industrial Way to Park Rd	City of Benicia	North/East – Industrial South/West – Industrial	None
8.8-11.7	2nd St to Lopes Rd	City of Benicia to Solano County	East – I-680/Light Industrial West – Open	On Lopes Rd: Quarry House (cultural resource, 200 ft west of pipeline route); abandoned cut stone house (cultural resource, 100 ft west of the pipeline route); homes (3 occurrences 200-400 ft east and west of pipeline route)
11.7-15.4	Lopes Rd	Solano County	East – I-680/Light Industrial West – Open/Agricultural	Dairy Ranch (cultural resource, 100 ft west of pipeline route); homes (6 occurrences 100-600 ft east and west of pipeline route) Valve (manual; MP 15.2)
15.4	Highway crossing	Solano County	Pipeline bore under I-680	None
15.4-16.0	To Ramsey Rd	Solano County	East – Open Area (fish & game) West – I-680/Open	Homes (west of I-680, 600 ft from route)
16.0-16.7	Ramsey Rd	Solano County	East – Open/Agricultural West – I-680/Residential (single-family housing in the City of Fairfield)	Homes (Southbrook and Cordelia Villages, west of I-680); Garibaldi Airplane Hangar (cultural resource, 50 ft east of pipeline route); greenbelts (west of pipeline route)
16.7-17.1	Ramsey Rd	Solano County	East – Open/Agricultural West – Open/I-680	Grizzly Island Wildlife Preserve (east of pipeline route)
17.1-17.6	Private ROW	Solano County	East – Agricultural West – I-680/Residential (single-family housing)	Homes (300 ft west of the pipeline route); Oakbrook Elementary School (west of I-680)

[3] The Peyton Slough Restoration Project has been authorized by the Regional Water Quality Control Board and involves decontamination, relocation and restoration within the slough area adjacent to the Rhodia site. The schedule for project implementation and completion is not yet known, but construction may take up to four construction seasons. ~~is expected to be completed by the end of 2004.~~

Page D.9-8, Table D.9-6 —

Table D.9-6. Segment 4 Land Use Types by Milepost

Milepost	Street	Jurisdiction	Land Use	Proposed Valves, Sensitive Receptors, and Other Concerns
24.5-24.8	Private ROW to Ohio St to Union Ave to Broadway St	City of Fairfield and City of Suisun City	East – Industrial West – Road/Open/Residential	West of pipeline route: County federal buildings (400 ft); County jail (400 ft); family center (500 ft); Fairfield Solano Community Action Care (400 ft); Armijo High School (500 ft) Valve (MOV; MP 24.8)
24.8-25.3	Private ROW	City of Suisun City	North – Industrial South – Open/Hwy 12/Industrial	None
25.3-25.8	Railroad Ave	City of Suisun City	North – Residential (homes, apartments, townhouses, condominiums) South – Residential (single- family homes)	High Power Praise Faith Center (75 ft north of pipeline route); First Christian Church (600 ft south); Children's World Learning Center (700 ft south); Grandma Bunny's Home Day Care (300 ft south)
25.8-27.2	Railroad Ave	City of Suisun City	North – Residential (homes, apartments, townhouses, condominiums) with intermittent open space South – Residential (single-family homes) with intermittent open space and light industrial	Sunset Creek Child Development Center (700 ft north of pipeline route); Fairfield Korean Baptist Church (850 ft south); Celebration Christian Center (800 ft north)
27.2-28.2	East Tabor Ave	~~City of Suisun City to~~ City of Fairfield	North – Residential (homes, apartments, townhouses, condominiums, mobile homes, RVs, trailers) South – Residential (single-family homes, mobile homes, RVs, trailers) with intermittent open space	Clayton Memorial Church of God in Christ (50 ft north of pipeline route); Tolenas Elementary School (600 ft south); Tolenas Park (400 ft north); Christian Serviceman's Center Hospitality House (100 ft south); Country Club Estates Community Center (350 ft north); Dover Mobile home Park Community Center (600 ft north)
28.2-28.3	Walters Rd	City of Fairfield	East – Open/Agricultural West – Residential (mobile homes, RVs, trailers)	Homes (one occurrence 800 ft east of pipeline route); Jehovah's Witness Kingdom Hall and conference center (under construction)
28.3-30.7	Huntington Dr to Peabody Rd to Vanden Rd	City of Fairfield to Solano County	North – Industrial/Light Industrial South – Light Industrial/Open	Travis Community Day School (300 ft north of the pipeline on Vanden Rd); Homes (150 ft south of Vanden Rd)

Page D.9-8, following Table D.9-6, under D.9.1.2, Segment 1, subhead City of Suisun City (Solano County) —

The pipeline route would run along Railroad Avenue, cross the Suisun City/Fairfield boundary at East Tabor Avenue, and run east along East Tabor Avenue before turning north along Walters Road~~, and once again entering the City of Fairfield~~. Residential is the primary land use along this section of the route, with a major Jehovah's Witness Kingdom Hall facility under construction in Fairfield. There are many sensitive receptors, including residences, churches, community centers, schools, and daycare centers on both sides of the route (see Table D.9-6). Many of the properties would be within 100 feet of the alignment. After traveling east on Huntington Drive and north on Peabody Road through light industrial areas, the pipeline would turn east and parallel Vanden Road into Solano County just after MP 30.7.

Page D.9-14, under D.9.2.1 Federal —

The primary federal agencies anticipated to have jurisdiction over the Proposed Project include: the U.S. Department of Transportation (DOT), which regulates the technical performance of oil and gas pipelines; the U.S. Environmental Protection Agency (USEPA), which has oversight authority over issues such as hazardous materials; and the U.S. Army Corps of Engineers (USACE) which regulates discharges into waters of the U.S. The California State Fire Marshal as an interstate agent for DOT has exclusive jurisdictional authority over the design, construction, operation, maintenance, and testing of the proposed pipeline.

Page D.9-15, under D.9.2.3 Regional and Local —

The Proposed Project would not conflict with the **City of Benicia**'s General Plan. An encroachment permit would be required for construction activities in public ROWs. ~~A Conditional Use Permit (CUP) would have to be obtained for construction on private property (Meunier, 2002).~~

Page D.9-16, under D.9.2.3 Regional and Local —

The **City of West Sacramento** would require a CUP for the portion of the pipeline within the City and an encroachment permit for construction on public land. As long as proposed pipeline capacity is not expanded by over 30% over existing capacity, no discretionary permits would be required from the City in the existing ROW. The City's General Plan provides that up to 2005, existing uses in the South River Road area between Pioneer Bridge and the barge canal may expand by right up to 30 percent of their 1996 improvements and may be further expanded subject to discretionary approval. The plan sets a schedule for eventual transition to greater office use beyond 2011 (Goal A, Policy 10). As currently proposed, the project would be consistent with the City's General Plan (Tilly, 2002; City of West Sacramento, 2000).

Page D.9-17, under D.9.3.3 Impacts of Pipeline Construction —

Land use impacts of construction include those addressed in the CEQA Guidelines (CCR Sections 15000 to 15387). SFPP has estimated that construction activities would proceed at an average daily rate of ~~300~~ 500 to ~~500~~ 800 feet in urban areas, with faster rates for cross country work. ~~However, pipeline construction in more developed areas generally takes longer, and could move at rates as slow as 200 feet per day.~~ Therefore, it can be expected that construction disturbances would occur for up to 2 weeks at any given point along the proposed ROW, throughout the anticipated eight-month total construction period. This would mean daily disturbances of noise, dust, equipment emissions, possible odors, traffic congestion, limited parking, access detours, and utility disruptions to land uses adjacent to the ROW, including to residents, employees, shoppers, schools, parks, community facilities, and particularly emergency vehicles.

Page D.9-18, under Mitigation Measures for Impact LU-1: Pipeline Construction Disturbance to Sensitive Land Uses —

LU-1a Construction Notification. SFPP or its construction contractor shall provide at least 30 days advance notice of the start of construction to all residents, occupants, and landowners along the construction ROW and staging areas. Notification shall be by mail or by posting notices along the construction ROW and shall be implemented more than 30 days before the start of construction in each area. The announcement shall state specifically where and when construction will occur in the area. If construction delays of more than ~~7~~ 14 days occur, an additional notice shall be made, either along the construction ROW or by mail.

Page D.9-19, under Mitigation Measures for Impact LU-2: Temporary Loss of Agricultural Land or Income —

LU-2b Compensation to Land Owners. Prior to the start of construction, the Applicant shall negotiate an easement and submit an offer letter to ~~enter into an agreement with~~ each land owner and/or farmer, as appropriate, to provide fair compensation for the loss of income from cultivation of land taken out of production due to pipeline construction. The negotiated easement shall identify the pipeline route and depth.

Page D.9-20, under D.9.3.6, Segment 1, Phase 1 Carquinez Strait Crossing —

These land uses are industrial and include the Zinc Hill and Rhodia Plant area on the Martinez side and a paved parking lot on Benicia Industries' property on the Benicia (north) side. As described in Section D.6 (Environmental Contamination and Hazardous Materials), the Rhodia site and Peyton Slough are contaminated due to historic heavy metal contamination of the soil, and planning for a remediation and restoration effort is underway. Because of the temporary nature of construction in the area and the surrounding land uses, construction is unlikely to substantially interfere with activities, and impacts would likely be less than significant (Class III).

D.10 Noise

Page D.10-12, under Impact N-4: Noise From Station Changes —

The proposed changes to the Concord Station would include a new surge pump, replacement shipping pumps, and a new hydraulic power system for the new surge system. The surge pump motor (1,200 horsepower) and other new systems could be substantial stationary sources of noise. If new stationary sources of noise would cause more than 55 dBA L_{dn} at the nearest NSA in Concord, at least one-quarter mile away, south of State Route 4, then a significant impact would occur. In order to meet this criterion, all new equipment would need to generate less than 75 dBA at the station. Upgrades to the piping, meters, instrumentation, and controls of the Concord Station would not substantially contribute to changed noise levels. Because new pumping and power systems could cause noise above 55 dBA L_{dn} at nearby noise sensitive areas, the operational noise impacts from changes at the Concord Station would be potentially significant (Class II), but mitigable to less than significant levels with implementation of Mitigation Measure N-4a.

D.11 Utilities and Service Systems

Page D.11-2, Table D.11-1:

Table D.11-1. Utility and Service Providers by Jurisdiction

Jurisdiction	Utility or Service System Provider
Contra Costa County	Natural gas – PG&E Electricity – PG&E Water – Contra Costa Water District and Central Contra Costa Sanitary District (reclaimed) Wastewater – Mt. View Sanitary District and Central Contra Costa Sanitary District Solid waste – Contra Costa Solid Waste Authority Telephone – Pacific Bell
City of Martinez	Natural gas – PG&E Electricity – PG&E Water – City of Martinez Water Division/Contra Costa Water District and Central Contra Costa Sanitary District (reclaimed) Wastewater – Mt. View Sanitary District and Central Contra Costa Sanitary District Solid waste – City of Martinez Solid Waste & Recycling Department Telephone – Pacific Bell
Solano County	Natural gas – PG&E Electricity – PG&E Water – Solano County Water Agency Wastewater and solid waste – Solano County Environmental Management Department Telephone – Pacific Bell
City of Benicia	Natural gas – PG&E Electricity – PG&E Water – ~~Solano County Water Agency~~City of Benicia Wastewater and Sewer – City of Benicia Public Works Solid waste – Pleasant Hill Bayshore Disposal Telephone/fiber optic – Pacific Bell
City of Fairfield	Natural gas – PG&E Electricity – PG&E Water – Solano County Water Agency/Fairfield Department of Public Works Water Division Wastewater and sewer - Fairfield Department of Public Works Water Division and Fairfield-Suisun Sewer District Solid waste – Solano Garbage Company Telephone/fiber optic – Pacific Bell/AT&T
City of Suisun City	Natural gas – PG&E Electricity – PG&E Water – Solano County Water Agency Wastewater and sewer – Suisun City Department of Public Works and Fairfield-Suisun Sewer District Solid waste – Solano Garbage Company Telephone – Pacific Bell
Yolo County	Natural gas – PG&E Electricity – PG&E Water – Yolo County Flood Control & Water Conservation District Wastewater – Yolo County Planning and Public Works Solid waste – Yolo County Division of Integrated Waste Management Telephone – Pacific Bell
City of West Sacramento	Natural gas – PG&E Electricity – PG&E Water and wastewater – West Sacramento Public Works Department Solid waste - Yolo County Division of Integrated Waste Management Telephone – Pacific Bell

Page D.11-8, under Mitigation Measure for Impact US-1: Service Disruption During Construction —

US-1a Protection of Underground Utilities. Prior to the start of construction in each jurisdiction, the Applicant shall submit to the CSLC written documentation, including evidence of project review by the ~~appropriate~~ affected public works agencies for that jurisdiction, including the following:

- **Construction plans showing the dimensions of existing and proposed underground structures and illustrating the distance of the proposed pipeline from existing underground utilities. Specifically, where the pipeline crosses the City of Benicia raw water pipeline, there shall be at least 24 inches of separation between the two pipelines, with the products pipeline below the water pipeline.**

Page D.11-12, under Section D.11.3.8, Cumulative Impacts

Collocation Accidents. As discussed above, other pipelines (petroleum products, natural gas, and water) would be present along some sections of the project route. In the event of a major accident, an adverse interaction between one of these pipelines and the Proposed Project could occur. Rupture of the proposed pipeline could lead to a petroleum product spill, gas release (from other pipelines in the ROW), and possibly fire that would either impact other utilities or impede restoration of service. In addition, rupture of another pipeline in the common easement could damage or rupture the proposed pipeline. Damage to other utilities and service systems in the pipeline corridor due to an accident would impede restoration of service. With mitigation proposed in this EIR (specifically, Mitigation Measures US-1a above and S-1a (Minimize Effect on Other Underground Facilities) and other measures to ensure pipeline safety as defined in Section D.2), the impact of collocation accidents associated with this project and other critical infrastructure would not be cumulatively considerable.

D.12 Transportation and Traffic

Page D.12-2, Table D.12-1 —

Table D.12-1. Roadway/Railroad Encroachments and Crossings – Contra Costa County and Carquinez Strait

Roadway or Railroad (Location)	Relationship to Route (Pipeline MP)	Jurisdiction	Classification	Lanes	Traffic Volumes
Solano Way (Concord Station)	Parallel Encroachment (0.0 – 0.1)	Private	Private	2	NA[1]
BNSF (east of Pacheco Slough)	Crossing (1.5)	Private	–	–	–
Central Avenue (west of Pacheco Slough)	Parallel Encroachment (1.8 – 2.0)	~~Contra Costa County~~Private	Minor Urban	2	NA
Arthur Road (west of Waterbird Way)	Parallel Encroachment (2.4 – 2.5)	Private	Private	2	NA
Waterbird Way (Arthur Road to Shore Terminal Property)	Parallel Encroachment (2.5 – 3.3)	Contra Costa County	Collector	2	NA
UPRR (east of Waterfront Road)	Cross Encroachment (3.4)	Private	–	–	–
Waterfront Road (East of Interstate-680)	Cross Encroachment (3.4)	Contra Costa County	Arterial Rural	2	4,369

Page D.12-11, under Impact T-2: Construction Restricting Property Access —

A significant impact (Class II) could occur where access to a parking lot, parking structure, or a critical land use (such as a school, business, residence, other construction project, or recreation area) would be blocked by construction equipment, activities, or the open trench. This impact can be reduced to a level that is not significant through the application of Mitigation Measures T-2a and T-2b, described below. Although the Project Description (Section B) has described these practices in general terms, they are detailed below for additional clarity.

Page D.12-11, under Mitigation Measure for Impact T-2: Construction Restricting Property Access —

T-2a Minimize Access Concerns. Prior to finalizing construction plans, SFPP shall work with each jurisdiction to identify all land uses and concurrent construction activities along the ROW with access concerns. SFPP shall develop construction scheduling in a manner that minimizes impacts to businesses, institutions, or residential areas, scheduling construction to avoid the hours or days of the week during which land uses receive the most activity, and avoiding peak traffic times adjacent to residential areas. In addition, construction activities shall be coordinated with other construction activities that may use the same roadways. Construction schedules for work that may restrict access to such land uses shall be approved by the applicable jurisdiction. In addition, SFPP shall ensure that at least one access driveway is left unblocked during all business hours or hours of use. Notices shall be posted along the construction ROW, or schedules shall be provided by SFPP to the landowners or tenants at least 30 days in advance of construction so that they can inform residents or customers. If access problems can be avoided by scheduling night construction in non-residential areas, this option should be considered (see Mitigation Measure T-1a).

Page D.12-14, under Mitigation Measure for Impact T-6: Degradation of Road Conditions —

T-6a Restoration of Roads. Roads disturbed by construction activities or construction vehicles shall be restored to at least pre-construction conditions to ensure long-term protection of

road surfaces unless otherwise directed and approved by the local jurisdiction. Care shall be taken to prevent damage to roadside drainage structures. Roadside drainage structures and road drainage features (e.g., rolling dips) shall be protected by regrading and reconstructing roads to drain properly. These measures shall be incorporated into an access agreement/easement with the applicable governing agency prior to construction.

Page D.12-15, under Mitigation Measure for Impact T-7: Disruption of Public Transit Services —

T-7a Coordinate with Public Transit. SFPP shall coordinate construction activities at least 30 days in advance with public transit agencies to avoid disruption to transit operations. Public transit agencies that operate bus routes on the roadways potentially affected by the proposed construction activities shall be informed in advance of the pipeline project and the potential impacts at bus stop locations. Alternate pickup/dropoff locations shall be determined and signed appropriately. SFPP shall document coordination with transit agencies and provide documentation of this coordination to the CSLC ~~60 days~~ prior to the start of construction.

Page D.12-16, under D.12.3.6 Impacts by Segment, Segment 1, Phase 1 —

Construction activities associated with the Phase 1 Carquinez Strait crossing would occur on private property owned by Rhodia, and would not directly encroach public roads. Therefore, direct impacts to road transportation and traffic would be minimal. Mitigation Measure T-2a requires coordination regarding other ongoing construction so if the Peyton Slough Remediation and Restoration Project is underway during pipeline construction, traffic coordination in this area will be required. However, there is a possibility that construction vehicles that would be needed to haul heavy equipment and materials to the construction sites could damage existing private road surfaces or features. Implementation of Mitigation Measure T-6a would reduce this potential impact to less than significant levels (Class II). In addition, temporary automobile and truck trip traffic and parking impacts would result in a less than significant impact (Class III), but Mitigation Measure T-5a would reduce this impact further.

Page D.12-19, under D.12.3.8 Cumulative Impacts, new third paragraph —

The Solano Transportation Authority has expressed concern that construction of certain components of the I-80/I-680/SR 12 Interchange Improvement Project may coincide with construction of SFPP's Proposed Project, with the Cordelia Mitigation Segment recommended in Mitigation Measure B-4a, or the EP-1 mitigation segment of the Existing Pipeline ROW Alternative, identified below. The Solano Transportation Authority notes that the location of pipeline may increase the risks of conflicts with the highway project.